CONSERVATION AND PRESERVATION OF MANUSCRIPTS IN MANIPUR

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CERTIFICATE

This is to certify that the thesis entitled **"Conservation and Preservation of Manuscripts in Manipur"** submitted by Smt. Laishram Sadhana Devi is a result of a painstakingly serious and deeply committed research work carried out under my Supervision. Smt. Laishram Sadhana Devi has utilized the materials obtained from her own field works and evidences from other relevant sources. This thesis, in part of in full has not so far been submitted to any University or Institute for the award of any degree.

I further certify that Smt. Laishram Sadhana Devi has fulfilled all the conditions prescribed by the Manipur University for submission of the present thesis.

I am glad to recommend the thesis to be sent to the examiners for its evaluation for the award of the Degree of Doctor of Philosophy in Manipur University.

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ABSTRACT

This thesis entitled "**Conservation and Preservation of Manuscripts in Manipur**" is a humble attempt to shed light for the local custodians of Manuscripts in the trends of the conservation and preservation of the Manuscripts in Manipur.

Out of curiosity, the research scholar had developed an interest in the old Manuscripts popularly called Puya, at first amateurish but, at last passionate. For a while, the scholar tried to access the rare information and knowledge hidden in these Manuscripts written in an archaic script. Subsequently, that curiosity rendered to an apprehension, if these puyas, which were written on perishable materials happen to perish, a rich heritage of information and knowledge will be lost for ever from Manipur. This apprehension further led to this surmise that the so-called local custodians of Manuscripts, both under and outside the aegis of the Government, ought to be equipped with the knowledge of different types of modern scientific techniques of the preservation and conservation of Manuscripts, besides the traditional methods and techniques.

The long practice of the scientific processes and trends of the preservation and conservation of Manuscripts by the National Archives of India and the follow-up study of these scientific processes by several

scholars outside the aegis of the National Archives of India culminated in the establishment of the National Mission for Manuscripts, New Delhi which introduced a new method based on the symbiosis of the age-old traditional trends and methods with the modern scientific methods of the preservation and conservation of Manuscripts. However, the local or native custodians of Manuscripts do not have easy access to such knowledge as they do not and cannot have frequent contacts with information – oriented institutions or authorities. They do not have even the adequate information or knowledge of the scientific method and mechanism. Therefore, paying frequent visits to the local custodians is highly necessary for communication to them the essential knowledge or information about the modern up-to-date methods of the preservation and conservation of the Manuscripts.

The old Manuscripts written in archaic script were known as Puya and were considered to be sacred and holy. Scholars well versed in the Puyas were called Maichous who worshipped them with veneration. The Puyas were rich sources of history and folklore. They dealt with various subjects such as literature, geographical landscapes, astrology, cosmology, genealogy, origin of gods, administration, migration and settlement of the early inhabitants, dance and music, prediction, rites and rituals, theology, medical treatment, etc. etc.

It is generally assumed that the development of writing and keeping records by historiographers began in 33 AD in Manipur. Yet the script of Meiteilon (Manipuri language) was fully developed by the 15th century only. And the first Manuscript in this archaic script is said to have appeared during the reign of Meitei king, Kyamba (1467-1508). The name of that Manuscript is Cheitharol Kumbaba which was the royal chronicle of Manipur. This chronicle started from the reign of Meitei King, Nighthou Khomba, father of king Kyamba. The historical development of Manuscripts in Manipur reached its climax in 1616 A.D. during the reign of Meitei King, Khagemba. In this year writing materials such as paper (handmade) and pen (made of plant and animal objects) were produced with royal patronage. The royal patronage carried on till 1891 when Manipur was annexed to the British Empire.

It would be of great interest to note that Manipur used to adopt the Assamese-Bengali script during the reign of Bhagyachandra (1763-98 A.D.)[1] and the Devanagari script during the reign of Chandrakirti (1850-86 A.D.). There are many Manuscripts written in the Assamese-Bengali script. These books deal with different topics with regards to the Hindu religion and the affairs of the followers of Hindu religion. Manipuri books written in Devanagari or Nagari script are reported to have flourished in 1871 A.D.[2]

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1 Dr. Jamini Devi, Khuroi Haora Lamlangtong (Imphal, 2004) : p. 39.

2 Lm (L) Ibungohal & N. Khelchandra : Cheitharol Kumbaba, p. 390.

Epigraphic records written in Assamese-Bengali script are also available in Manipur. The Manuscripts written in Assamese-Bengali script were in vigorous flow during the reign of Nara Singh (1844-50 A.D.) as evidenced by the letter written in Assamese-Bengali script by Raja Nara Singh to Mr. Gordon on 28th Janaury, 1844 A.D.[3]

The Meiteis knew the art of making indigenous paper and indigenous ink. Before the introduction of paper in Manipur, Manuscripts were written on agarbak, plates made from the bark of agar (aloeswood). The indigenous paper was known as Meitei-che (Manipuri paper). The Meiteis learnt the art of making paper from the Chinese (known as Khagi to the Meiteis) who came to Manipur during the reign of Mungyamba (1562-1597 A.D.). This paper was made from the fibre of a plant called 'su'. Later, during the reign of Khagemba who was the son of the above named king Mungyamba, the Pangal war-prisoners taught the Meiteis to make paper in a more improved way. These Pangal war prisoners were Muslims from Bengal. Writing pens were made of bamboo split. Kameng and Sanneibi were special bamboos for the purpose of making pens. The quills of the porcupine and hornbill were also used as writing pens. Sometimes, Manuscripts were written on the leaves of 'tengna' which grew abundantly in Kabaw Valley (Myanmar).

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[3] Ibid : p. 265.

Meitei-che, the indigenous Manipuri paper had a preservative quality in itself, which helped to preserve the Manuscripts.

The Manuscripts of Manipur had a travesty of fate twice. In 1732 A.D. Maharaja Garibniwaj @ Pamheiba, influenced by his mentor, Shantadas Gosai to convert the Meiteis into Hinduism, burnt all the available Manuscripts into ashes. Garibniwaj ordered all the books be collected and piled up into a high stack in the form of a funeral pyre which was then consigned to flames in the manner of cremating a dead body according to the Hindu rites. The number of texts of the Manuscript destroyed on this occasion was 121. This occasion is the most shocking event in the history of Manipur. Revivalists of to-day's Manipur are commemorating this event as 'Puya Meithaba' (Burning of sacred books) every year in the month of Wakching (December-January). Again, the British, after defeating Manipur in the Anglo-Manipur War, 1891, burnt numerous books in July, 1891 at Kangla, the ancient Palace of Manipur. On this occasion the number of texts burnt was 139. Constant warfare with the neighbouring Countries, particularly Burma (now Myanmar), might have caused great spoil and loss of Manuscripts lying in the custody of both the Royal Palace and the individual custodians. Due to the internecine feuds among the Princes of Manipur for the throne, the Awas (Burmese) occupied Manipur for seven years from 1819 to 1826. People suffered untold miseries. This period is

known as the Seven Years Devastation (Chahi Taret Khuntakpa). This is the darkest episode in the history of Manipur. There was liability of countless Manuscripts being lost or damaged during this period.

There are many agents that impair and damage the Manuscripts. There are also various factors –biological, chemical, artificial, geographical, environmental etc. – which cause deterioration to the Manuscripts. The rat, mouse, ant, mite, termite, silverfish, cockroach etc. are the most common enemies of the Manuscripts. Acidity, impure air, dust and harmful gases harm the Manuscripts. Careless handling of the Manuscript, careless folding of the leaves, lack of routine checking, disorderly maintenance of the Manuscript like not cleaning the dust falling on the leaves and covers of the Manuscripts, etc. are artificial/physical causes for the deterioration of the Manuscripts. Climatic change, humidity, heat, temperature, rain, sunshine, etc. also tell upon the Manuscripts. Moth, mould and fungus harm the Manuscripts to an extent.

The Manipuris had their own indigenous methods and techniques of the preservation and conservation of the Manuscripts. All the custodians of old Manuscripts, be he a ‘maichou’ (scholar) or a layman, knew the art of conservation and preservation. They used to treat written surfaces of the Puyas with the juice or pulp of marigold, sunflower, trumpet flower, tobacco-leaf, etc. They also to rub the written surfaces of the Manuscripts

with alum and blue vitrol. All these measures were meant to ward off insects, rodents and pests from biting, gnawing and damaging the Manuscripts.

For safe keeping, easy carrying and to prevent from accidental fall and careless handling, the old Manuscripts used to be compressed, each Manuscript separately, between two wooden planks very tight and then bound with a rope. The size of the plank was corresponding to that of the respective Puya. This measure greatly helped to prevent the absorption of water vapour, which in turn protected the Manuscript from mould that damaged and decayed the leaves of the Manuscript. The compressed Manuscript in between the planks was again wrapped all over with a wrapping cloth. This was a further step to enhance the advantages rendered by the compression of the Manuscript between two planks. This step also protected the Manuscript from insects, pests, rodents, dirt, dust and decay. It would be apt to mention here that the compressing of the Manuscript between the planks and the covering of it with a wrapping cloth is in agreement with the modern scientific method of preservation and conservation of Manuscripts.

Another indigenous method of conservation and preservation of the Puyas was to keep the Manuscripts into a ‘tabu’, a special basket with a cover, and then keep the ‘tabu’ on a hanging structure made of wooden rods

or bamboo strips or a wooden board having holes, over the hearth or family fireplace. The special hanging structure on which the ‘tabu’ was placed was called ‘lap’, which served the purpose of a safe custody of the Manuscripts. However, warming the ‘tabu’ on the ‘lap’ with heat from the hearth or fireplace was tantamount to affect the health of the Manuscripts, as we have seen from the provisions of National Mission for Manuscripts. Sunning the Manuscripts in sun-light was also a common practice adopted by the Puya experts or custodians for preservation of them. This practice also is quite incompatible with modern scientific method of conservation and preservation.

It is a matter of great pride that the Manipur State Archives has succeeded in collecting at least 16,000 Manuscripts in its custody to this date. The flow of the development of Manuscripts in Manipur is still continuing. The act of copying the Manuscripts is being taken to multiply the number of Manuscripts. Now, the Manipur State Archives, as the nodal agent between the National Archives of India, New Delhi and the National Mission for Manuscripts, New Delhi, systematic and scientific methods of preservation and conservation have been introduced in both public and private sectors.

A field study for this research work was undertaken to collect information and data from the local custodians living in different rural and

urban areas of Manipur. Much rapport for collection of information, both primary and secondary, was also received from the Manipur State Archives.

For convenience of study, the research plan has been divided into the following chapters.

Chapter I : As an introduction, this gives a brief historical and geographical account of Manipur. The names by which Manipur was known at different epoch and to different countries or nations are given in this chapter. Describing the meaning and origin of the term 'Manuscript', this chapter gives the objective of writing this thesis.

Chapter II : Along with definition of Manuscript in the International and National contexts, this chapter deals with the historical development of Manuscripts in Manipur. The history of Meitei Mayek, archaic Manipuri script is given here. How the Puya is written is shown in this chapter. The manufacture of indigenous paper, ink and pen is elaborately studied here. The subjects and topics which the different Puyas study are dealt here.

Chapter III : This chapter studies the factors of deterioration of the Manuscripts in Manipur. The factors are i) natural/physical

factors, ii) biological factors, iii) chemical factors, iv) geographical/ecological/environmental factors. There are artificial factors like war and fire. The shocking event of burning the sacred texts by order of king Garibniwaj is narrated here.

Chapter IV : This chapter deals with the indigenous practices and materials for conservation of Manuscripts in Manipur. The presence of preservative quality in the Puya itself is described in this chapter. The various measures for permanent preservation of the Manuscriptions are exhaustively described.

Chapter V : The Fifth Chapter deals with the scientific processes of conservation and preservation. After giving the history of conservation, it defines various causes of the damage suffered by the Manuscripts and the preventive measures thereof. How to mend, repair and restore the impaired Manuscripts is studied in this chapter. Many curative measure are also discussed.

Chapter VI : All the chapters have been briefed in the form of conclusion, which forms Chapter Six of thesis. With the presentation of this conclusion, the thesis is completed.

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CONTENT

CHAPTER – I

Introduction

Manipur is a tiny hill state in north east India, which has a two-thousand-year long history, and where a long line of sovereign kings had reigned in succession. That the name of this land was Manipur in the 18th century during the reign of Garibniwaj (1709-1748 AD) is testified by the Manuscripts, Miyat[1] and Sanamahi Laikan.[2] Before this tiny land was called Manipur, it was known by different names.

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1 Miyat, MS.

2 Bhogeshwar, Sanamahi Laikan, 1972, p. 50.
"The circular hole of this cave passes through the centre of the Earth, therefore, this capital is not an ordinary one. Let this country be called Manipur Leimayon. If used why, let's reply, 'In days of yore, Arjuna's son, Babhrubahana in the prime of his youth, to save his father's life, went into the depth of the nether, which feat a common man cannot perform, and brought the jewel from the crest of the one-thousand-headed snake, Ananta."

According to the Manuscript, Sakok Lamlen[3] the name of the this land was Tilli Kokton Ahanba in the first Chak (eon) Hayichak, Mira Pongthoklam in the second chak Khunung chak, Hanna Shemba Konna Loiba in the third chak Langbachak and Muwapalli in the 4th chak Konnachak. Those were the early names of Manipur, during the time of Garibniwaj before it was called Manipur, its name was Poirei Sana Leibak or Poirei Leibak according to the puyas, Miyat[4] and Sanamahi Laikan. During the reign of Garibniwaj, it's another name was Mekhali. This fact is known from a coin in which the title of Garibniwaj was inscribed as Mekleshwar. That its name was Mekhali is also known from a treaty signed in 1762 between The East India Company and Maharaj Jaisingh, in which the name, Mackley was mentioned as its name.[5] But in the numismatic coins produced during his reign, his title was inscribed as Manipureshwar. These were because Hinduism had spread in Manipur during the reign of Garibniwaj.

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3 Khulem Chandrasekhar Singh, Sakok Lamlen Ahanba 1992, p. 7.
"In the Hayichak era (Chak eon), the land of the Meiteis was Tilli Kokton Ahanba. In the Khunungchak era, it was Meera Pakthoklam. In the Langbachak, its name was Hannashenba Konna Loiba (First made,

4 Miyat, MS.

5 Naorem Sanajaoba, Manipur Treaties & Documents (110-1971) Vol. I, 1993, Pp. 12-13.

Manipur which stood as a sovereign country from an early time was known by different names to the neighbouring countries. The Assamese called Manipur, Mekley. The Bengalis called it Moglai, the Burmese Kathe, and the Shans of upper Burma whom the Meiteis called Pong, Kassey.[6] Geographically, the neighbouring states or lands of Manipur are Nagaland in the North, Assam in the West, Mizoram in the south-west and Burma (Myanmar) in the east. The territorial area of Manipur was, at different stages of history, was far bigger than the present geographical area, it has. The boundaries of Manipur, according to the mettle, courage and resourcefulness of its rulers from time to time, extended to Cachar Valley in the west, Chittagong Hill Tract in the south, Kabaw Valley in the east, Dhansiri river (Dimapur) and Sadiya (Assam) in the north.[7] But, as the boundary demarcation by the British, the territorial area of Manipur was limited to 22327 sq. km. during the reign of Chandrakirti, which area still remains to be geographical area of the present-day Manipur, according to the official records.[8]

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6 Gangmumei Kabui, History of Manipur, 1991, p. 2.

7 L. Ibungohal and N. Khelchandra, Cheitharol Kumbaba 1989, p. 398, 2nd Edition. N. Khelchandra Singh, Ariba Manipuri Sahityagi Itihas, p. 15-16, 1992. Gangmumei Kabui, Op. Cit., p. 7.

8 Gangmumei Kabui, Op.Cit., p. 7.

As Manipur has a two-thousand-year long history, and as the Meiteis who are the indigenous and majority ethnic people have a rich culture and tradition, they have a rich language and script. As a result of this, many people of this land are keeping in their custody many Manuscripts which had been composed by their forefathers through several generations in their own language and scripts. As a result, therefore, the archaic Manuscripts which we call Puya have become a rich heritage of Manipur. So, we should make an attempt to know how these Puyas were maintained and conserved, what measures and methods were undertaken to keep them intact and why they have been preserved for so long.

The study “Conservation and Preservation of Manuscripts in Manipur” describes the traditional way of conservation and preservation of old Manuscripts in Manipur. It describes the different types of Manuscripts found in Manipur and the way they are preserved till today. The study also discusses the different factors of deterioration of the Manuscripts, and the problems of traditional way of preservation, with a note on the precautionary measures against damages and disintegration.

Any hand written book or document or pieces of documents that was there before the invention of scientific equipment of printing is generally termed as a Manuscript. According to the *EveryMan's Encyclopaedia*,[9] the word 'Manuscript' is derived from Latin meaning 'written by hand of any kind on any material', although presently it is mainly used to indicate medieval writings on vellum or mode of writings on paper as distinguished from printed matters. Man naturally makes use of those writing materials which are the most readily procured and the most suitable. Palm leaves, bamboo-sticks, clay, stone material, ivory, bone, wood, bark, linen, wax, papyrus, leather, and other material were used, and are in use till today, for writing in various parts of the World.

If something durable was wanted, metal, clay or stone or other hard materials were employed. The writing thus produced are termed as **Inscriptions**. The old inscriptions usually engraved on non-perishable material, such as stone, or any other hard material, were called **Epigraphs.**[10] The first writing was recorded in Sumer city of Mesopotamia in c.5500 B.C. on limestone tablet. Epigraphs, therefore,

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9 N. Debendra Singh, Manipuri (Meitei) Manuscripts, Manipur University Museum Bulletin Vol. II (1987), p. 1.

10 Ibid, p. 1.

are quite different from Manuscripts on birch-bark, palm leaves or paper that come as a rule under archives.

The earliest Manuscripts were recorded in c.3500 B.C. from Egyptian tombs. These Manuscripts were written on papyrus. In India, Sutra literatures were considered as the earliest Manuscripts according to some of the scholars and were placed between 6th Century B.C. to around the 2nd Century B.C.[11] There are a large number of Manipuri Manuscripts written on different aspects of Manipur like astrology, religion, tradition, customary laws, political, social and economic affairs. Some of the Manuscripts are published ones while some are not. Several important Manuscripts of the State, such as official records are lying scattered in various libraries, archives, institutions and private repositories in different places of Manipur, India and in foreign lands. Manuscripts are found written in archaic Meitei scripts, followed by Bengali and Devanagari scripts. To name some of the important Manuscripts of Manipur, we could mention *Nongpok Haramlon*, *Sorarel Macha Khunkumba*, *Ningthourol Lambuba*, *Shamuphaba*, *Govinda Nirupon, Mayang Ngamba, Takhelngamba*, etc.

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11 N. Debendra Singh, Ibid, p. 2.

Any form of engraved or written Manuscripts or chronicles of royal heritage are said to be accepted in the reconstruction of the history of Manipur as they are considered as authentic treatises of particular historical periods.

Objective

The primary objective of undertaking the present research study is to present a comprehensive, analytical and critical account of the conservation and preservation of Manuscripts in Manipur, more specifically in the traditional ways with a note on the present conventional methods.

It may be mentioned here that the custodians of the old Manuscripts in Manipur have very little knowledge about chemical conservation. As the materials used for preparation of Manuscripts are very sensitive to Relative Humidity and climatic condition of the region, many valuable Manuscripts are deteriorating day by day. Silverfish, rats and growth of micro-organisms due to high or low temperature and presence of acid on the paper are the common diseases of these Manuscripts. The colouring pigments, ink and other materials used for preparation of the old Manuscripts often become agents for

the deteriorating factor. Therefore, preservation and conservation of these valuable material heritage of the State is of utmost importance.

In the light of the above arguments, the author had taken up the present research study to work for the conservation of the State's material heritage. This is the primary aim and object of this research work.

Methodology

Methodology adopted in this thesis consists mainly of field visits to State Archives, Secretariat Library, Manipur State Museum Library, Manipur State Kala Akademi and a few private custodians, with focus on scrutinizing the record keeping methods applied by these institutions. The author joined national workshops on Manuscripts conservation and preservation organised by Government agencies and by private custodians to have better understanding of the processes of conservation and preservation of Manuscripts being taken up by the different institutions.

The published materials are extensively referred to in this present study. The available Manuscripts in private collections have

also been incorporated. The state archival sources have been thoroughly studied, and duly incorporated. The author had attended a three-month conservation work for Manuscripts held at the Manipur State Archives office followed by several short term conservation and preservation workshops organised by the National Mission for Manuscripts, New Delhi, in collaboration with the Directorate of Art and Culture, Government of Manipur. These workshops provided comprehensive knowledge on the subject under study.

Review of Literature

Review of previous works on conservation of Manuscripts in Manipur have been taken up by the author for better understanding and comprehensive analysis of the subject under study.

According to Dr. A.P. Singh (1987) during the past decade rapid social and political changes have taken place and consequently the responsibilities to preserve the cultural properties have considerably increased. Cultural properties are being damaged even today by several agencies. Sometimes, during the process of preservation they face disastrous end, or the results and the efforts are unsatisfactory.

The Chemical Conservation and Research Laboratory of the Government Museum, Chennai is one of the pioneering conservation laboratories attached to museums in India. Conservation of cultural properties means that remedial measures are to be taken up to eradicate the defects already present in the objects and protecting them from further damage by maintaining certain conditions for their better preservation. Dr.V.Jeyaraj (2002) suggests that to remedy the defects present in an object and to remove the unwanted material, one has to examine the object, diagnose the defect, document its condition and the type of treatment needed, and then treat it. The custodians should know the characteristics of the objects, their chemical behaviour and the effects of environment and other causes of deterioration of the objects.

T.R.Gairo (1959) suggests that the science of preservation deals with scientific investigations carried out to throw light on the composition and manufacture of the different materials present in the museums. It deals with the determination of the causes of deterioration and the formation of undesirable incrustation on the surface and the core which get defaced. The science of preservation of museum objects also deals with the elimination of factors which cause deterioration and

thereby suggests the removal of the undesirable incrustations and the extraneous deposits from the museum objects, thus rendering them immune from further undesired attacks.

Museums today have to perform diverse and multiple functions. All museum objects whatever be their category, when they are being transported, are being brought to the museum or taken out of it and are being put on exhibition, photographed or studied, even when they are in storage, thus constantly exposed to the dangers of damage and deterioration. O.P. Agrawal (1977) suggests that Museums must realize that proper methods of storage of safety against insects, fungus or fire are as important for preservation of objects as the treatment in a conservation laboratory.

Today, museums try to create a surplus for making the institutions sustainable. According to N.Harinarayana and Dr.V.Jeyaraj (2002) the most important duty of the museums is to preserve the collection they possess. Lack of information and training on how to take proper care of museum objects often than not limits the museum staff to execute their duties at their personal best. The Government Museum at Chennai, therefore, had started a course on the care of

museum objects since 1974 in order to disseminate knowledge of conservation to the museums staffs.

Dwivedi (1980) points out that Dr. Grace Morley was the first Museologist to realise the importance of proper storage in museums and she gave a new lease of life to the Central Asian Antiquities by arranging proper storage methodology. How dear the 'Conservation, Preservation and Care of Objects', which have been dealt in Chapter VI of this thesis, have been contributed to Dr. Morley can well be illustrated by an incident which occurred at the time of an exhibition arranged for the International Congress of Orientalists in 1964. One of the staffs was counting the leaves of a Manuscript received on loan for the exhibition in the conventional way by licking his fingers. As soon as she noticed it, Dr. Morley scolded the person and said that besides the fact that he was likely to fall ill, he could have damaged the already tattered Manuscript. Then she herself demonstrated as to how to count the leaves of a Manuscript gently with the help of both the hands.

Detailing the objective of the National Mission for Manuscripts, the Mission was launched on 7th February in 2003 by the Ministry of Culture, Government of India, and it has the mandate of identifying,

protecting and making accessible the Manuscript heritage of India, with the objective of surveying, documenting, cataloguing, preserving and disseminating information on the Indian Manuscripts.

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CHAPTER - II

Archaic Manuscripts of Manipur and the Art of Writing

The Manipuri language (Meiteilon) is one of the scheduled languages of India. It is a language spoken by around 3.4 million people all over the world. More than 1.8 million people in Manipur including the ethnic Meiteis and Manipuri Muslims (Meitei Pangal) use this language as their mother tongue. It is also the *lingua franca* for more than 0.8 million tribal population living in the State. The Manipuri language, though included within the fold of the Tibeto-Burman family of the Kuki-Chin group as classified by Dr.Grierson in his work, 'Linguistic Survey of India', has now been analysed as

having different characters which do not belong to any of the known classified groups of North East India's languages.[12]

With its specificity in structure and character of language, the scripts of this language have no affinity with any other script within or outside the country. Dr.Grierson's contention has not been supported by the world's leading authorities on the Tibeto-Burman language, such as J.A.Malisoff (2003), George Van Driem (2001) and David Bradely (1997). Therefore, Meiteilon is now categorically placed under an unclassified group.

Historical Development of Meiteilon (the language of the Meitei)

There are different views on the development of the Meiteilon language, its script and written characters. The following views will highlight the historical development of this language.

R. Brown observed that "The Manipuri possesses a written character of their own which seems to be a modification of the Nagari. This character is said to be very ancient, only a few can write it. The

[12] Dr. Grierson, The Languistic Survey of India Part-III, Vol. IV., p. 76.

Bengali script in recent times has been chiefly used, except, in cases relating to Manipuri proper itself".[13]

Dr. Grierson was of the view that an alphabet of Meitei character's origin was said to date back to the rise of Bengali influence in 1700 A.D.[14]

It can be summed up that Manipur has been incorporated in the prehistoric map of the world after a series of significant archaeological excavations. The findings of the excavations points out that Chinese neolithic culture arrived at Napachik around 2000 B.C.[15] The excavations and its studies reveal that the civilization of Manipur had links with China and other parts of South East Asia since the palaeolithic age.[16]

The Burmese chronicle *Maharajanas* refers to Dhajaraja of the Sakya race who settled in Manipur around 550 B.C. and conquered upper Pagan (Burmah).[17] Some Pongs after conquering Burma, Lacha

13 R. Brown, Statistical Account of Manipur, Delhi, 2001, p. 94.
14 Dr. Grierson, Op. Cit., p. 79.
15 O. Kumar Singh, Napachik : A stone age site in the Manipur Valey, Imphal, 1983. Pp. 11-16.
16 Ibid, p. 17.
17 P. Gogoi, The Tai & Tai Kingdom, Guwahati, 1968. p. 8.

and Tripura settled on the west bank of the Loktak lake. This resulted in the assimilation of the Sakya culture with the indigenous forms.[18]

Palaeographic insight on the Manipuri language

A palaeographer is a historian of ancient scripts. A short account of palaeographically traced out evidence on the Manipuri language and subsequently the development of its script dates the archaeological data, thus tending to be reasonably secure and assisting in ascertaining the historical chronology provided by the archaeological evidences. Palaeographically supported evidences in Manipur may be discussed as in the following paras.

The first palaeographic evidence on stone Epigraph inscription was the inscription of the Khoibu Epigraph which mentioned the name of King Sameirang and his brother Thamanglang in archaic Meitei script. Most of the scholars opine this inscription was erected during King Kyamba.

The Report on Archaeological Studies in Manipur (Bulletin No.1) discovered the written character in archaic Manipuri alphabets on copper plates discovered from Phayeng village in Imphal West

[18] Ibid, p. 25.

District. It established the antiquity of the Meitei script upto the 8th Century A.D. But modern scholars assume that this inscription was written during the period of King Chandrakirti.[19]

So far as writing is concerned, it probably is around 6000 years old. The Near East was a centre of development of writing, paper and ink, books, libraries and schools, literature, music, sculpture and architecture. The Aryans borrowed from Babylonia and Egypt. In India, the Devanagari script developed fully around the 10th or 11th Century A.D. and the Manuscripts were also dated from the same period. The present Bengali script fully matured by around the 15th Century. The Rig Veda, the oldest book of India, was written as far back as 1000 B.C.

In this context, it may be assumed that the development of writing and keeping records by historiographers, though initiated in 33 A.D., the scripts of Meiteilon were fully developed only around the 15th Century A.D. But according to the historian R.K. Jhaljit, the

19 Mutua Bahadur & P. Gunindro Singh, Epigraphical Records of Manipur, Vol.-I, Imphal (1985), p. 8.

development of written material and characters was established by the middle of the 8thCentury A.D.[20]

Manuscripts in archaic Scripts

The appearance or production of the first Manuscript in Manipur is said to have occurred during the reign of the Meitei king, Meidingu Kyamba (1467-1508) The Manuscript which is said to have been written in archaic Meitei script is the *Cheitharol Kumbaba* which was started from Meidingu Ningthou Khomba, the father of King Kyamba. The claim is favoured by modern scholars as the reasonable one. Again, as referred to by preceding scholars of Manipur, most of the old Manuscripts were burnt during the regime of the Meitei king, Meidingu Mayamba alias Garibaniwaj (1709-48 A.D.).

It is reported that the British after annexation of Manipur to their South-East Asiatic colonial dominion in 1891 A.D., had burnt numerous scriptured records and books of Manipur during June-July of that same year. The available Manuscripts of Manipur may broadly be classified into (i) Pre-Garibaniwaj Manuscripts, and (ii) Post-Garibaniwaj Manuscripts. Most of the old Manuscripts were written

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[20] R.K. Jhaljit Singh, A short history of Manipur, Imphal, 1965, p. 15.

before the reign of Meidingu Garibaniwaj. The Manuscripts written after the inroad of Hinduism, that is, during and after the reign of Meidingu Garibaniwaj were quite different from the earlier Manuscripts. The original Manuscripts of Manipur which were developed before the famous '*Puya Mei Thaba*' (that is, burning of the old Manuscripts of Manipur) are all traceable today, whereas, the copied Manuscripts have been recently discovered and identified.[21] Manuscripts of pre-Garibaniwaj era were vulnerable to damage and destruction due to the influence of Hindu missionaries.

Nature of Manuscripts

By archaic Manuscripts are meant the old books that were written before the advent of modern printing technology in Manipur, by using manually manufactured and self-made writing plate, ink and pen. These archaic Manuscripts are known to the modern generation as "Puya". Our revered fore-fathers, after having a script of their own and writing materials, took down the rich accounts and traditions that had been handed down from generation to generation, from mouth to mouth, and then handed them down to the posterity as a heritage.

21 Laishram Mani Singh, Manipur Itihas, Bijoy Panchali : Surchandra @ Tikendrajit Charit (Imphal-1976) Pp. 169-617.

These invaluable treasures have now become a great help to the modern generation for research in the origin, history and culture of the Meitei people. Today's generation not only holds them in awe but also worships them with incense and lamp before opening to read on auspicious days. The 'puyas' are believed to be infallible and eternally true. They are regarded as holy books.

The way of writing puya :

The puyas that we find in abundance in today's Manipur, were written in indigenous script using indigenous materials. The script employed in the puyas is known as Meitei Mayek. The writing of puyas is of two types, lathup and latam. In latam, the writing plates are square and of the same size and are written on leaf by leaf, each leaf meticulously numbered. The leaves are then folded together into a book form. In opening the latam, the leaf is moved forward one after another for reading. All large books were written in latam. In lathup, a long sheet is continuously turned over into equal square folds and the writing is done leaf by leaf. In opening the lathup, the leaf is moved forward one after another. Smaller books and short ritualistic prayers and chants are written in lathup.

Specimen of Latam (Folio)

Specimen of Lathup (Folder)

Nature of opening Latam (Folio)

The writing of a puya begins with the introduction of a letter called ‘Anji’. A puya Manuscript contains three parts. In the first part, the author invokes his god or king so that he can write his book wisely, successfully and without any defects. Earlier, there was a tradition to start the writing of the Manuscript on an auspicious day by wearing clean clothes and lighting incense and lamp. This opening part of the book is called ‘salutation’. In these puyas like Thangwairol, Chainarol, Naothingkhong Phambal Kaba, Takhelngamba, Khuman Kangleirol, Toreirol Lambuba, Ningthourol Lambuba, Thawanthaba Hiran, Khongjomnubi Nongkarol, etc. we first come across the letter ‘Anji’ and then the invocation, ‘Hayahe, He Liklai-o’. ‘Haiya he’ means mother-goddess of the universe. ‘He Liklai-o’ means ‘Oh! King’.

These Puyas Sanamahi Laikal, Tharol, Nungban Pombi Luwaoba, Sanamahi Laihui, Selloi Langmailon- begin with "Hayahe He Khoiyum Lainingthou', by way of invoking both the mother goddess and the father god. Again certain books begin with the salutation, Hayi Haya he. A rough translation of the salutation in the puya, Sakok Lamlen, is as follows : "Oh mother-goddess! Oh father god! Oh King of Heaven! Supreme Lord of the universe, magnificent god, omnipotent, vast as the ocean! I bow to you, placing the immortal sky god on my head, with folded hands, plucking hair from the crown of my head, and biting grass in my teeth. Though my offering may be beneath your dignity, please be not unkind to me".[22] Thus, this salutation begins the writing of this puya and is the first part of the Puya.

In the second part of the puya we find all the important aspects and details written from beginning to end. The third part contains the ritual chant 'Mikon Thagonba', which means calling back the souls. In some Puyas, this Mikon Thagon chant is very long but in some Puyas, very short. The writer/author writes this ritual chant in the third part of

[22] Khulem Chandrasekhar, Sakok Lamlel Ahanba, 1992, p. 1.

the book to recall the impaired souls for the well-being and all and concludes it by chanting ‘Hayi Haya’.

At the time of numbering the leaves of the Puyas in Latam, there was a tradition of writing the word ‘Shri’ before each number. For numbering a lead, both its obverse and reverse make one unit and each unit carries a number. There is no evidence of paragraphing in the Puyas. From beginning to end, one word joins with another word and so on, as if in a string, now, when we write a space between successive words. But in the Puyas, two words or three words or four words are strung together without any space in between. And there was the style of putting in two vertical lines after every two or three or four strung words as a punctuation mark. As a result, if we do not understand the archaic words of the Puyas, we will fail to split the strung words in correct pronunciation. Again, when writing a context, before another context follows, two or three or four vertical lines are put in after every context in succession. And sometimes the writer stylistically draws here and there a round line or a swaskita or a flourish to denote the context of an account or an anecdote, Bengali letters or numerals were used in numbering the leaves of the Puyas. While devising the Meitei

script, Meitei numerals might have not been devised. Hence the possibility of the use of non-Meitei numerals in the Puyas.[23]

Subjects discussed in the Puyas :

Though the archaic Manuscripts are collectively known as Puya, the subjects discussed in them were many and various. The names of the Puyas dealing with different subjects are given below :

1. Historical :

Many Manuscripts are found to contain rich sources of history and folklore. Mention may be made of Cheitharol Kumbaba (Royal Chronicle of Manipur), Meitei Ningthourol Lambuba (Account of the heroic Royal tours), Moirang Ningthourel Lambuba (Royal Chronicle of Moirang), Khuman Kangleirol (Royal Account of Khuman Clan), Chengleirol (Account of the Chenglei Clan), Naothingkhong Phambal Kaba (Coronation of Naothingkhong), Thawanthaba Hiran (Boat war of king Thawanthaba), Chingthangkhomba Ganga Chatpa (Pilgrimage of king Bhagyachandra to the Ganges), Chandrakirti Jila Changba (King Chandrakirti's visit to Cachar), Khaghi Ngamba (Conquest of

[23] Naoroibam Indramani, Ariba Khut-ee Lairikshing Amasung Manipurda Masibu Tung Koina Leeduna Amadi Ngak Senduna Thamnaba Lamdamsigi Oiba Pambeishing, (Seminar paper).

Khasi Hills), Awa Ngamba (Conquest of Burma), Takhel Ngamba (Conquest of Tripura), Gambhirsing Nonggaba (The Death of king Gambhir Singh),Chainarol (Stories of duels), Samsok Ngamba (Conquest of Samsok), Ahongpung Lallupan, Keipharol, Miyat, etc.[24]

2. Literature :

The following Manuscripts are books of great literary importance, viz. Nongban Pombi Luwaoba, Khonthoujam Nongarol, Khongjomnubi Nongarol (Ascent of the Pleiades), Chothe Thangwai Pakhangba, Panthoibi Khongul, Dhananjoy Laibu Ningba, Sanamanik, Bidhi Nongdamba, Naotingkhong Phambal Kaba, Numit Kappa (shooting of the Sun), Thawanthaba Hiran, Nongyai Chakha Moirengba Heirem Kangbisu (Duel between Chakha Moirengba of the Khuman clan and Kangbisu the Heirem), Ningthou Mapu Thiba, Panthoibi Naheirol, Hijan Hirao, etc.[25]

3. Geographical features/landscapes :

As regards the Manuscripts dealing with the geographical features and landscapes, Mention may be made of the following :

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[24] Ningthoukhongjam Khelchandra, Ariba Manipuri Shahityagi Itihas, 1969, p. 47.
[25] Ibid, p. 46.

Thangmeirol, Meitei Kangleirol, Salkao (Stories of the bulk duels), Toreirol Lambuba (Account of the rivers and drains), Nongmaijing Chingoirol, (Account of hill ranges of Nongmaiching), Langol Chingoirol, (Account of hill ranges of Langol), Loijing Chingoirol (Account of hill ranges of Loijing), Koubru Chingoirol, Heibok Chingoirol, Laikao, Thanga Chingoirol, Luwanglon Khongul, Meitei Kangleiron, In addition to the above named books, Cheitharol Kumbaba, Ningthourol Lambuba, Numit Kappa, Panthoibi Khongul, Khongjomnubi Nonggarol, Poireiton Kunthok (Migration of Poireiton), Moirang Ningthourol Lambuba, Chengleirol, Khamlangba Khunthok (Migration of Khamlangba), etc. also give vivid accounts of various landscapes and geographical features.[26]

4. Astrology :

Among the Puyas, there are some books dealing with astrology. Mention may be made of Subika, Subika Cheithin, Subika Laishaba, Subika Choudit, Numit Tha Thawanmichak (Sun, Moon and Stars)

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[26] Ibid, p. 46.

Khenchanglon, Leichillon, Nongdon Langbum, Khutlou, Ahing Nungthil Punglup Puthokpa.[27]

5. Cosmology :

Among the Meitei Puyas, there are many books that deal with cosmology. They give a vivid account of the creation of the universe, the earth, trees, grasses, living beings, mankind, migration and settlement. Some books concerned with this aspect are Pudin, Leithak Leikharol, Leisemlon Shei-onba, Leisemlon Ariba, Khamlang Ireng Puwari.[28]

6. Genealogy :

In this regards, the Manuscripts worthy of mention, are Chekkhong, Nongkhrang, Khangemba Yumbi, Keiroi, Langthabal Lon, Shangai Phamang, Ningthoujalon (genealogy of the Ningthouja clan), Angomlon (genealogy of Angom clan), Khabarol (genealogy of Khaba clan), Khumanlon, Chengleirol, Luwanglon, Moiranglon, Salai Taret Poklakpa (The rise of seven clans), Sagei Yumdaba (formation of

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27 Ibid, p. 47.
28 Ibid, p. 47.

families of lineages), Sagei Yumsetpa. They tell of the progenitors of the seven clans and the successive generations of their descendants.[29]

7. Origin of gods (lai) :

Of the puyas which give information about the origin of the lais (Gods), whom the Meitei worship with belief, awe and reverence, and their activities, we can mention Sanamahi Laihui (origin of Sanamahi and his activities), Pakhangba Laihui, Nongsaba Laihui, Laigi Laihui etc.[30]

8. Administration :

The Puyas which deal with the administrative activities of the state are Mashil, (Professions, duties) Loiyumba Shilyen (Distribution of employments/professions by king Loiyumba), Shang Pannabagi Mashil, Phamlon, Yumnakki Mashil (professions given to the families), Pheidagi Mashil (Duties allotted the Eunuch department), Kei Loi Lingba, Shanglon, Wayel (judgement), Phijet Chakcha (Dress

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29 Ibid, p. 48.
30 Ibid, p. 48.

and food-habit), Khunthong Khaiba, Cheirapki Phamlup, Loigi Potna Mashil (tributes and duties of the tributaries and low caste people).[31]

9. Khunthoklon :

Khunthoklon means migration and settlement. In this respect, the Puyas worth mentioning are Poireiton Khunthok, Khamlangba Khunthok, Pakhangba Khunthok, Poireiton Ningchit, Nongshaba Khunthok, Angom Khonghou, Bamol Khunthok (migration and settlement of Brahmins), Nongchup Haram (people migrating from the west), Nongpok Haram (people migrating from the east), Mayang Tekhaolon (genealogy of the Ahom settlers), Kalishalon (genealogy of the Bishnupriyas), Ukhongshanglon (Genealogy of the Ukhongshang settlers), Kshetrilon, Lairikyengbam Lon (genealogy of the Lairikyengbam families).[32]

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31 Ibid, p. 49.
32 Ibid, p. 49.

10. Dance and music :

Anoirol, Ougri, Khencho, Pung Isheigi Hourakpham (the source of drum and music), Penagi Meihoubarol (origin and background of the Pena), Nonglaosei (Rain calling songs), Kumdamsei, etc.[33]

11. War and battle fight :

Regarding war and battle fight and the like, we can mention these Puyas – Shapha Lanpha Mana (Rewards given for capturing war captives and animals on hunt), Lanmiyamba (Sriking at the warrior), Thenggourol (A ritual spear dance), Shapha Lanpharol, Lanchak Thakpa (Appeasement of war victims), Leichillon etc.[34]

12. Prediction :

There are many Puyas that make predictions about the course of events that would happen in future. It is believed that, the predictions mentioned in those Puyas about future events came true and will come true in the future also. Puyas of this kind are Sekchin, Matamgi

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33 Ibid, p. 50.
34 Ibid, p. 50.

Khonglei, Ningthourel Singkak, Shinghal, Langdai Puya, Maichou lang-ol, Kaibarol, etc.[35]

13. Theology :

Sakok Lamlen, Thirel Layat, Khamlang Puwari Ahuirol, Apok Sana Lamlen, etc. are concerned with Theology. They give a treatise of religious beliefs and doctrines.[36]

14. Medical treatment :

The Puyas that describe how to treat and cure different ailments and diseases are Maibaron, Hidaklon (list of medicine), Thebarol, Theba Pulei Phukpa, Mihun Kanglon (The lore of the feeling of pulse), Yelhen, etc.[37]

15. Ritual prayers and chants :

Atai Laishon, Anam Athou Kokpa, Iru Laison, Ahonglon, Pongning, Umanglon, Kontharol, Naheirol, Yumdai Nakseng, Pongthourol, Yenthourol, Tudourol, and Sana Lam-ok are some of the

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35 Ibid, p. 50.
36 Ibid, p. 50.
37 Ibid, p. 50.

Manuscripts in which are written prayers and chants for ritual and ritualistic purposes.[38]

16. Ritual of worship :

For the rites and rituals of worship, we may mention these Puyas, namely, Thoudou Mashil, Irat Thounirol (Lore of worship rituals), Chupsarol (The ritual of blocking the recurrence of unnatural death), Yukourol, Laihatlon Lumbuba, Yaibirok Irat, Apokpa Achouba Khurumba, Apokpa Thounirol, Inga Thouniba, Yangbi Irat, Pakhangba Yangbi, Taoroinai Yangbi, Chadum Chaballon, Kumjan Irat, Khunung Irat.[39]

Besides the Manuscripts mentioned above, there are also Puyas which locate important holy places. e.g. Nunglon, Naoyom, Thirel, Sekning, Chinglon Laihui, etc.[40]

Dating the time of writing the Puyas :

The Puyas were not all written at the same time. According to the time of their writing, they can be classified into 2 groups, old Puyas

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38 Ibid, p. 51.
39 Ibid, p. 51.
40 Ibid, p. 51.

and new Puyas. Puyas written before the reign of king Garibniwaj are classified as old Puyas. And those composed since the reign of king Garibniwaj are classified as new Puyas. Why the reign of this king became the dividing line between the old and the new was, since this king embraced Hinduism and initiated his subjects into Hinduism, the Puyas composed thereafter underwent a great change from the previous Puyas. Due to western literary influence, foreign words crept into Meitei vocabulary, people began to adopt Sanskrit names, the original names of the gods and deities were changed to Hindu ones, and the names of Hindu gods in newly written Manuscripts. Due to the endeavour to write Sanskrit words, new letters were devised in the Meitei script and the combination of one letter with another letter began to develop.[41]

Based on an event of the burning the Puyas, we can easily separate the Manuscripts written before the reign of Garibniwaj. It is because the most unfortunate event in the history of Manipur, which still remains a heart-burn in the minds of the present generation, happened during the reign of Gairibniwaj. On that tragic occasion,

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41 Naoroibam Indramani, (Seminar paper) : Op.Cit.

altogether 120 Manuscripts were consigned to flame. By order of the king and by making proclamation on horse-back, all the revered sacred Manuscripts were collected and piled up as high as a hill before Kangla Utra and consigned to flame as if cremating a dead body.[42] This event is still now remembered as 'Puya Mei Thaba', i.e. burning of the sacred books.

A short account of the burning of the Puyas is as follows – On the death of king Charairongba, his son Pamheiba @ Garibniwaj became king of Manipur in 1709 A.D. at the age of 20. After a reign of eight years, in 1717 A.D. in the month of Mera, he embraced Nimandi Dharma through Guru Gopal Das and became a devotee of Lord Krishna.[43] After some years, he became a devotee Lord Ram by embracing Ramandi Dharma through Shantidas Gosai, who came from Narsingh Tilla of Sylhet.[44] Garibniwaj asked his subjects to embrace Ramandi yet they refused. So he resorted to several measures to initiate the subjects forcibly into the new religion. The Meiteis who buried the dead were forced to cremate the dead. The skulls of their late

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42 Miyat, MS.

43 L. Ibungohal and N. Khelchandra, Cheitharol Kumbaba, 1989, 2nd Edition, p. 110. "The first day of Langban month was Monday 2nd on the closing day of this month, the king and others took initiation (into a new religion) from Guru Gopaldas."

44 Ningthoukhongjam Khelchandra, Op. Cit., p. 35.

forefathers were forcibly dug out of the graves and then consigned to flames by cremation.[45] The 9 (nine) revered, awesome 'Unmanglais' of the Meiteis were buried together in the forest of Mongba Hanba. The holy abodes of 7 (seven) 'Umanglais', viz. Laiingthou Panthoibi, Lai Wahaiba, 2 Lammabis, Soraren, and Hoidompokpi, were all destroyed.[46] Still, he was unsuccessful to forcibly initiate the people into the religion. Therefore, he began to think that, as long as there were Puyas relating to Meitei religious beliefs, rituals, prayers and worship, he would never be able to propagate the new religion among the people. Shantadas Mahanta instigated the king to collect all the Puyas and have them consigned to the flame. Thereupon, Garibniwaj made a proclamation by sending out elephant-messengers that all the available Manuscripts in the kingdom should be brought at Kangla Utra. Before Kangla Utra, six posts (fuel logs) were erected and fastened around by bamboo strips, 7 layers of logs (one layer is the ground layer) were laid within enclosure of the six posts called Chuks. Then the collected Manuscripts were all piled up on layers of the logs

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45 L. Ibungohal and N. Khelchandra, Op.Cit., p. 85.
"On Sunday, the king set out to cremate the remains of his forefathers on the bank of the Ingthi (Ningthi or Chindwin) river."

46 Ibid, p. 87.

are consigned to the flame. This is what we still commemorate as Puya Mei Thaba.[47]

According to the Puyas called 'Miyat', the list of 120 Manuscripts that had been consigned to the flame is as follows,

(1) Taoroinai Yangbi	(2) Pakhangba Yangbi
(3) Pakhangba Naoyom	(4) Sanamahi Naoyom
(5) Taoroinai Picha	(6) Pakhangba Thiren
(7) Pakhangba Laihui	(8) Sanamahi Leikha Nongkhan
(9) Leithak Leikharol	(10) Leikha Nongkharol
(11) Leichinlon Yumbi	(12) Nonglon Laicham
(13) Nonglon Yumbi	(14) Nonglon Krakhong
(15) Nongon Langbum	(16) Sanamahi Leihui

[47] Miyat, MS. "When the king, when asked if all the available books in his kingdom were only these, replied in the affirmative, Santada asked the king and the people to appear in front of Kangla Utra. He also came out before Kangla Uttra. All the books were piled up from north to south. Round the pile of books, four post of Uchiwa bamboo were erected and over it a cloth awning was spread. Shantadas led the people going round the pile of books. Filling a pot with water and holding a knife and a torch in hand, he went round the pile. The king and the people also followed him. He made seven rounds around the books from right to left. At each round, all the bamboo posts in the four corners were struck with the knife and water was poured on them. When lit with a fire almost all the books were burnt to ashes."

(17) Nongdon Leichinlon (18) Leiron Yumchetpa

(19) Leichinlong Naoyom (20) Leipakta Houba Leichinlon

(21) Patal Langbum (22) Thirel Shakok

(23) Thirel Shingkap (24) Khunung Shingkap

(25) Thirel Meiram Leeba (26) Thiren Layat

(27) Thirel Laicham (28) Thirel Cheppi

(29) Thirel Thipokpi (30) Thirel Krathong

(31) Leisangkhong Thirel (32) Yumbi Thirel

(33) Nongmaijing Thirel (34) Heipok Thirel

(35) Langol Thirel (36) Koubru Laikhei

(37) Thangjing Laikhei (38) Chingkhei Shekning

(39) Chinga Sangkhei (40) Lalambung Langkhei

(41) Wangbren Shekning (42) Nunglon Lambuba

(43) Nunglong Yumbi (44) Nunglon Khra

(45) Nunglon Laicham (46) Nunglon Yangbi

(47) Shakok Laicham	(48) Khoi Mahou
(49) Mahou Langbum	(50) Mahou Chant
(51) Mahou Shekning	(52) Mahou Phijapok
(53) Mahou Langbumthen	(54) Tanthong Mahou
(55) Lemthong Mahou	(56) Nongpai Mahou
(57) Leihou Mahou	(58) Yumbi Mahou
(59) Thenkhen Mahou	(60) Leichai Mahou
(61) Thenka Mahou	(62) Nonglon Mahou
(63) Leiroi Mahou	(64) Chakparon Mahou
(65) Hiri Langsung Mahou	(66) Kithum Mahou
(67) Chakparon Thenkaba	(68) Konna Nungbung Koiba
(69) Nongdon Hiri	(70) Khunung Shampum
(71) Thiyanlon	(72) Manatlon
(73) Chulatlon	(74) Maraklon
(75) Hiri Langshunglon	(76) Chongkhulon

(77) Khambiron (78) Laiyat thenggourol

(79) Charaplon (80) Apoklon

(81) Apok Langbumlon (82) Langmaiching Chinggoirol

(83) Heipok Chinggoiron (84) Chingthang Chigoirol

(85) Thangjing Chinggoirol (86) Koubru Chinggoirol

(87) Loijing Chinggoirol (88) Konjeng Kokphairol

(89) Chongkhu Lambi (90) Khunung Punggoilon

(91) Khabi Thelenlon (92) Shibika

(93) Sating (94) Khunthok Yangbi

(95) Mahou Yangbi (96) Chingshatlon

(97) Ulon (98) Walon

(99) Pabot Khangchinglon (100) Sangbum Langbumlon

(101) Kri Langshunglon (102) Thangyang Hibuklon

(103) Shingkhal Langkhallon (104) Shingtapung

(105) Sana Sekning (106) Poireiton Khunthokpa

(107) Poireiton Ningchit (108) Khammoi Yammoi Shekning

(109) Sanamahi Thiren (110) Pakhangba Thiren

(111) Nongshaba Khunthok (112) Nungbi Nungtharon

(113) Waba Langkalon (114) Kongkha Laichoulon

(115) Sheloi Ningchitlon (116) Paphal Uhoulon

(117) Numit Khenchanglon (118) Tha Khenchanglon

(119) Thawanmichak Khenchanglon (120) Taoma Hiyang Kollona.[48]

Besides the above 120 books were also burned before Kangla Utra, but although all the pre-Garibniwaj Manuscripts were feared to have been ever lost many Manuscripts were saved by virtue of Lourembam Khongnangthaba's sagacious instruction and clever manoeuvre. For fear of royal punishment, these Manuscripts were kept concealed in far-off villages and hills. More than 40 (forty) puyas,

[48] Ibid, Miyat MS.

feared to have been lost, are still in the custody of some noted custodians of Manipur.[49]

Terming the pre-Garibniwaj Puyas as old Puyas, we can term the Puyas after post-Garibniwaj era down to king Bhagyachandra to king Chandrakirti, as new Puyas. As a result of the initiation into Hinduism during the reign of Garibniwaj, post-Garibniwaj Puyas were replaced with the names of Hindu gods and goddesses. Not only that, due to the contact with western literature, several foreign words were employed in the new era Manuscripts. Meitei scholars began to compose certain Khandas (Chapters) of the Hindu epics, Ramayana and Mahabharata, in archaic Meitei language. For example, Angom Gopi who flourished during the time of Garibniwaj, composed 'Parikshit' and Kritibas Ramayana in archaic Meitei language, with an admixture of Sanskrit words. About the said Ramayana, mention may be made of Kishindhya Kand, Lanka Kand and Uttarkand. Wahengbam Madhabram composed Mahabharat Birat Parva and Birat Shanthuplon.

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49 Ibid, Miyat MS.

Labanga Singh Konthoujam wrote Ram Nonggaba, and Longjam Parshuram composed Langgoi Sagol Thaba.[50]

For dating these puyas, we can apply certain methods. The methods are (1) to see the influx of foreign words in the diction of the Puyas; (2) to scrutinise the mention of Hindu gods in the Puya, (3) to examine if a person well known in the Puyas is mentioned in the concerned Puya, (4) to find out which name of location of Manipur is mentioned in the Puya, (5) to examine if the name of the Puya writer is mentioned somewhere in the Puya. With the application of these methods, we can determine in which century the Puyas had been written.[51]

Materials used for writing the Puyas (Manuscript) :

The materials used for writing puyas in early Manipur in the form of writing plate were Meiteiche (Manipuri paper), Agarbak (plate made of aloeswood), copper plate, leaf of tengna plant, bamboo strips, and stone, Meiteiche, Agarbak and bamboo strips were used for writing purposes. And, the stone and the copper plate were etched with

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50 Ningthoukhongjam Khelchandra, Op.Cit. p. 115.
51 Naoroibam Indramani (Seminar Paper) : Op.Cit.

an iron tool and letters were inscribed on them. Below is given a detailed study about the writing materials.[52]

(1) Meitei che (Manipuri handmade paper) :

Most of the Puyas that we find today were written in locally manufactured paper called Meitei che. The Khagis (Chinese) taught the Meiteis the art of manufacturing paper. Before knowing the manufacture of paper, the Meiteis used to write on Agarbak,[53] a plate made of the bark of aloeswood tree. The story of the Meiteis learning the manufacture of paper from the Khagis runs thus : - During the reign of Meitei king Mungyamba (1562-1597 AD), Piyangu reigned in Khagi country. During that time, in the land of the Khagis there lived an uncontrollable giant named Meidana, who was very strong and very expert in war and battle fight. Piyangu desired to reign in his kingdom in peace by killing Meidana. Yet Piyangu failed in his attempt to kill Meidana. So, he secretly sent an emissary to Manipur to request the Meitei king Mungyamba to kill Meidana. When Mungyamba acceded to the request, Piyangu induced Meidana to go to Manipur and reign there by killing king Mungyamba. From the land of Khagi, Meidana

52 Ibid, Naoroibam Indramani (Seminar Paper).
53 Ibid, Naoroibam Indramani (Seminar paper).

came to the land of Meiteis and challenged king Mungyamba, “If you win, kill me. And if I win, I will kill you and reign as the king of this country.” In a fierce battle, Mungyamba killed Meidana with the help of a spear called “Ta Khangsunaha” and a sword/Thang called “Khoubomba”, Meidana’s body was kept in Kangla with a heavy stone slab pressing on it.

On hearing the news of Meidana’s death, the happy Khagi king came to the Manipur kingdom with several of his countrymen and brought many presents. After bestowing the precious presents to the Meitei king, the Khagi king planted a Khagileihao plant (Chinese champa) in Kangla. He also built a gate of brick called Hogaibi Thong inside Kangla. He also built the statue of Kangla Sha with brick and installed it inside Kangla. Further, he taught the Meiteis the manufacture of brick and paper. King Piyangu left in Manipur many Khagis who had accompanied him from China (Khagi). They settled in Nongchup Kameng and Suisa Kameng. These Chinese settlers taught the Meiteis the manufacture of brick and paper, the Meiteis started paper making.[54]

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[54] Mutua Jhulon, Bijoy Panchali, 1936, p. 68.

The Meiteis manufactured paper from the fine fibres of a plant called ‘Su’ which is small and not tall. At one time the Meitei writer, to make paper for his writing purpose, used to grow ‘Su’, abundantly in his own compound. After cutting down the plants, he removed the barks of these plants. He cut the barks into small pieces and soaked them in water. Then the fine fibres were moulded into paper.[55]

First, a wooden frame, proportionate to the desired size of the paper sheet is made. Then it is fastened tight a piece of cloth through which water can easily filter. Then, the fibres of ‘Su’ that have been already pounded and boiled to remove the dirt are soaked in a pot containing water. The water in the pot is scooped up by a bowl and poured into the wooden frame which has been immersed in a pool of water upto the upper level of the frame itself. After the paper fibres/pulps in the frame are evenly treated with smooth wooden or bamboo ladle, the wooden frame is lifted up from the water. The paper fibres or pulps will be found adhering to the cloth of the frame as a flat membrane. After the flat paper membrane is dried in the sun, it is detached from the cloth of the frame. Then the flat paper membrane

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55 Naoroibam Indramani (Seminar Paper) : Op.Cit.

has turned into a broad paper sheet. In order to stiffen the sheet and make it free from ink-blot it is treated thinly with the starch made of cooked rice of a hard, tasteless variety and again dried in the sun. Now it will be a usable sheet of paper. The variety of rice the starch of which was used only for hardening and stiffening the paper is called 'Iroiya'. This particular variety of rice was cultivated for the purpose of making starch to stiffen paper only. Now, since the profession of paper making is no longer, this variety of rice is totally extinct. Sometimes, the starch made of the cooked rice of 'Tumai Angangba' was used in the making of paper.[56]

In order that, that sheet of paper prepared so far can be written on smoothly and neatly, its surface is smoothened by being pressed hard with the shell of Kangkhil (*Entada genus*) or the horn of a wild boar. In later period when the 'Su' plant was no more available, the useless sheets of old puyas were recycled into fresh paper after being soaked in the water.[57]

Formerly, the profession of paper manufacture was occupied by the Chesam family. But, during the reign of Khagemba, due to a

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56 Ibid, Naoroibam Indramani (Seminar Paper).
57 Ibid, Naoroibam Indramani (Seminar Paper).

quarrel on account of a broken boat, the king expelled his younger brother Shanongba from Manipur. Shanongba went to Mayang country (Cachar) and then invaded Manipur with Mayang (Cachar) and Pangal (Muslims) warriors. Khagemba defeated Shanongba and took captive 1,000 Pangal troops.[58] Among the Pangal prisoners there were men expert in the manufacture of paper. A new village named Irong Cheshaba was set up for the settlement of these expert paper manufactures. Along with it, the occupation of paper manufacture was entrusted to them. The Chesham family abandoned their former profession of paper making. Because they kept remote (tamthokpa) their own profession (mathou), they became Thoudam family.[59]

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58 Ibungohal and Khelchandra, Op. Cit., p. 33.
"God-king Khagemba vanquished the Mayangs (Cacharis). Shanongba was taken captive. 30 elephants, 1000 muskets, 1000 Pangals (Bengali Muslims) including blacksmiths, weavers, artisans, Pere (Clarionet) blowers, drummers, brass makers, washermen, horsekeepers, elephant-keepers were taken prisoner."

59 Information from interview with Pandit Moirangthem Narendra, Khongman Pandit Leikai.

PROCESS OF MAKING INDIGENOUS HANDMADE PAPER

1. Wooden frame with fasten tight a piece of cloth

2. Pouring the pounded and boiled fibre/pulf into the frame

3. Lifting up the frame from water after pouring the paper pulf

4. Sunning the frame for drying the wet paper fibre

5. Kneeding cooked rice for producing starch

6. Treating starch to the surface of paper fibre

7. Drying the paper in the sunlight

8. Taking out the dried paper from the frame

9. Sheet of paper after finishing process

10. Kangkhil (*Entada genus*) Seed

11. Smoothening the surface of paper by Kangkhil (*Entada genus*)

12. Measuring the paper in desired size

13. Cutting the paper

The nomenclature appeared to have been used when the foreign or machine-made paper was introduced in Manipur. Prior to this, the paper was known simply as *Che* (that is, 'paper' in the vernacular). This fact is proven by the use of the surname *Chesham* (that is, *Che+shaba+mayum*), or the family who made the paper. This surname is today extinct among the Meiteis, whereas, it is in existence among the families of the Manipuri Muslims.

The preservative and conservative materials of paper for the long endurance of the writings, or say of the Manuscripts, are added

during the process of making of the hand made paper, similarly as was done in the process of ink making.

The basic base-material for paper making is all of floral produces, including leaves and stems as outlined below:[60]

- Leaves of seasonal and semi-evergreen plants including trees, shrubs and herbs.
- Buds and leaves of seasonal grass, and soft and young stems, twigs.
- Various leaves of grass, shrubs and herbs.
- Young and soft stems of bamboo particularly Shaneibi waa, (*Bambusa arudinaceae* family Poaceae).
- Rags and remains of frayed clothes, fattered clothes, etc.

The catalytic materials are also products of the floral produces and these are alkaloids locally called *Utti*.[61] These alkaloid substance even acted as the catalyst in the paper making. The most widely used floral produce is *Kekru* (*Sapindus mukorossi*, family

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60 B. Kulachandra Sharma : Typology & Technology in Meitei Writing Materials (Handmade Paper, Ink & Pen) [Imphal-1999], p. 32

61 Ibid, Pp. 35-46.

Sapindaceae),[62] or soap tree. The organic material contained in this soap tree wards off insects and other tiny animals from harming the sheets.[63]

From the above findings it is brought to light that the ethnic Manipuris applied preservative and conservative methods since the early period of making the writing papers for the Manuscripts. Even though their methods may be primitive in nature, the local scholars ingenously employed techniques for the long term conservation of the Manuscripts.

2) Agarbark:

Next to Meitei che, the main item for writing Puya was the writing plate called agarbak. Agarbak is made of the bark of aloeswood (agar). After the bark of aloeswood is peeled, it is detached 2mm thick and cut proportionate to the desired size of the Manuscript to be written.[64] Since aloeswood is prone to mite, the planks made from aloeswood bark are seasoned in cow urine for a week. After the planks are cleanly washed, they are made to dry. When well dry, the plank

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62 Ibid, Pp. 46-47.
63 Ibid , Pp. 47.
64 Information from interview with Pandit Achouba Ngariyanbam Kulachandra, Akham Village.

meant for writing is smoothened both obverse and reverse. To smoothen the surface of the plank meant for writing, it was generally pressed with the rough leaf of 'Ashi Heibong' (*Ficus genus*).[65]

Specimen of Manuscript written on Agarbak

The Meiteis called the Manuscripts written on Agarbak 'Korbak or Korbek', a variant of Agarbak itself. To some people, the puya written on Agarbak was known as "Uku Puya" (Puya written on the bark). Before the use of paper was unknown here, Puyas used to be written on Agarbak. Therefore, Puyas written on Agarbak are considered to be old Puyas. Among the Puyas that are in the hands of present custodians, Subika which is a treatise of astrology was mostly written on Agarbak. It was from 16th century A.D. during the reign of Mungyamba that Manipur began to make use of paper after knowing

65 Ibid.

how to manufacture it. However, as we avail of Cheitharol Kumbaba written during the reign of Kyamba (1467-1508 AD), beginning with the reign of his father, king Ningthoukhomba, we can surmise that the tradition of writing ushered in this land Agarbak was exploited in lieu of paper.[66]

Before Assam knew the use of paper, it had already known how to use Agarbak since the 11th century. Assam was known to the Meiteis as Tekhao. At that time the Dimasas were ruling with Dimapur as their capital. During that time there was a matrineal alliance between Tekhao king and Meitei king, Loyumba. In this light, we can surmise that the use of Agarbak in Manipur ushered in from Assam at a later stage. Therefore, since the time of king Kyamba, as people of Nongchup Haram (people coming from west) like Bamon (Brahmin), Kshetrimayum, Lairikyengbam etc. immigrated into Manipur, there arose a script for writing and the vogue of writing. So Agarbak was used before paper in Manipur.[67]

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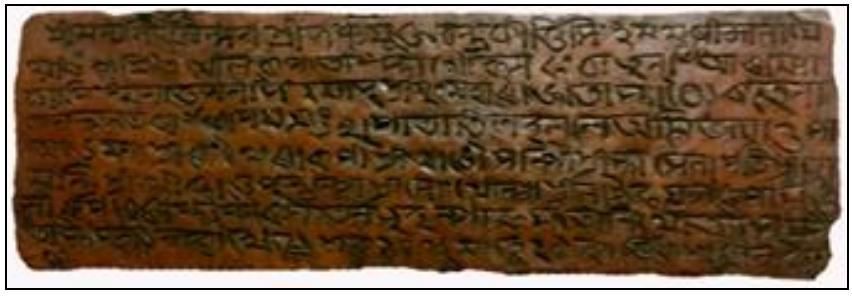
66 Naoroibam Indramani (Seminar Paper) : Op. Cit.
67 Nongchup Haram, MS, Mutua Jhulon : Op. Cit.

3) Copper Plate :

There was once a tradition of writing on copper plates. But books written in copper plates are very rare. Till now, only 'Shingkhal' of the time of Meidingu Khagemba, Maharaj Madhuchandra, Maharaj Chandrakirti and the copper plate of Phayeng are available. 'Shingkhal' is a puya written on 7 (seven) copper plates. This copper plate puya was discovered by late Pandit Achouba Ngariyambam Kulachandra by digging out an area at Khurai Heigru Makhong. It is still in the custody of the late Pandit Achouba.[68]

Copper Plate of Madhuchandra Maharaja 1803, Tripura.



Copper Plate of Chandrakirti Maharaja (1834 - 1844 AD), Thanga, Moirang, Bishenpur District.

[68] Archaeological Gallery, Manipur State Museum.

Kharam Pallel Iron Plate of Chandrakirti Maharaja (1834-1844 AD).

Phayeng Copper Plate

Another copper plate Puya was the one discovered by the former Archaeological Pioneer of Manipur, Wahengbam Yumjao, from a pond at Phayeng. This is still known as Phayeng Copper Plate.[69] After the death of Wahengbam Yumjao, the plate disappeared for a long time. Later, late Ningkhongjam Khelchandra produced three plates and handed them over along with Wahengbam Gourachandra, son of Late

69 Ibid.

Yumjao, to Manipur State Museum.[70] Except these Puyas; no other copper plate Puyas are available in the custody of any Manipuri custodians. In the copper plate Puya, the plate is beaten 2mm thick. Then, a tool like a small Chisel etches the plate to inscribe the letters.

4) Leaf of Tengna :

There was once a vogue of writing Puyas on the leaves of Tengna. Tengna is the name of a plant. To be fit to write on, the thin hard layer of the leaf is scratched out and cut into pieces of equal length. To protect from the mite, the leaves so cut are soaked in cow urine for a week and then cleaned with water. Then a sharp pointed thing scrapes the leaves to write on them. Tengna leaves are hard to find in Manipur. There are accounts showing that tengna plants grow in some areas of the Kabaw Valley, the leaves were brought into Manipur from there, and Manuscripts were written on them. Still now there are no evidences of Tengna growing in the forests and jungles of Manipur. Also, Puyas written on tengna leaves are very rare. In most custodies Tengna Puyas are hard to find.[71] There is a Puya called

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70 Information from personal interview with Wahengbam Gourachandra Singh, S/o Late W. Yumjao, Moirang Leirak.

71 Ngariyanbam Kulachandra : Op.Cit.

Khuman Kangleirol, written in Tengna leaves, in the custody of Manipur State Archives.

5) Wachet (Bamboo split) :

In Manipur, among the materials for writing Puya, the bamboo strip (Wachet) is also an item. A bamboo called Sanneibi is split apart and thin strips are made and cut into pieces. To protect from the mite, the pieces are seasoned in water or cow urine for a week. Then the obverse and reverse surfaces of the cut pieces are scraped out to be fit to write on. Nonetheless, Puyas written bamboo strips are mostly little books, spells, ritual prayers and hymns. Custodians of this type of Puya are very few.[72]

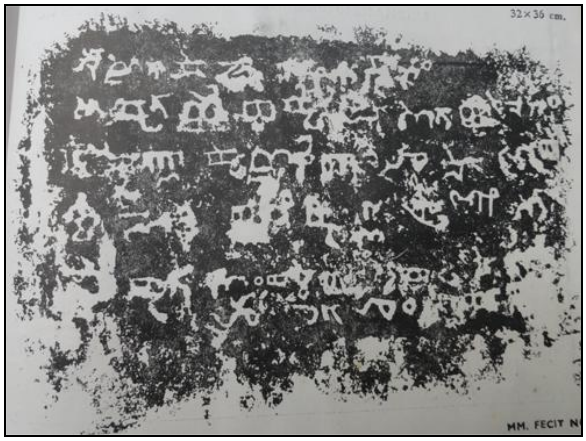
6) Stone :

Stone was an important material to write on. The surface of the stone on which it is to be written is scrubbed into a smooth plane. An iron implement etches the plane surface of the stone and letters are inscribed. However, most stone inscriptions are royal edicts. They are not in the custody of individual custodians. They are related to shrine under the aegis of the erstwhile rulers, to commemoration of important

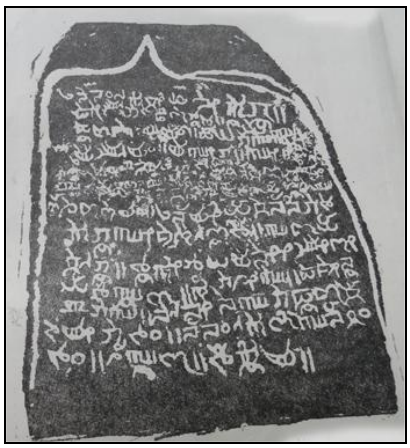
[72] Naoroibam Indramani (Seminar Paper) : Op.Cit.

historical events, to inauguration of markets. The following stone inscriptions are worth mentioning, - stone inscription at Khoibu, Stone inscription at the shrine of Konthoujam Lairembi, stone inscription erected at the inauguration Ningol market, Stone inscription at Haochong, Stone inscription at Leishangkhong, Stone inscription at Andro, Stone inscription at the shrine of Heisnam Lairembi, Stone inscription of Nawang Lashang etc.[73]

Stone Inscription :



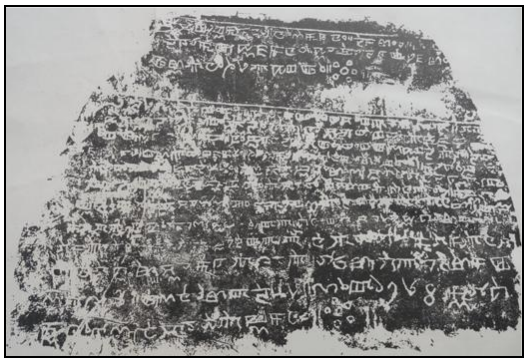
Khoibu Stone Inscription



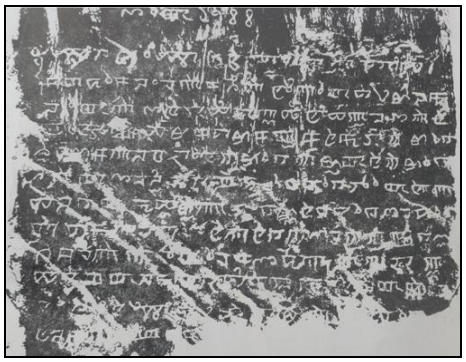
Stone Inscription of Konthoujam Lairembi

[73] Dr. H. Rajmani. Assam University, Silchar, Stone Inscriptions Value, Importance & Preservation, A Seminar paper. L. Ibungohal and N. Khelchandra, Op.Cit. Mutua Bahadur and P. Gunindro, Epigraphical Records of Manipur, Vol-I, p. 15-19.

Stone Inscription of Ningel



Stone Inscription of Haochong



Stone Inscription of Andro

Stone Inscription of Leishangkhong

Language :

Meiteilon is a language divisible into two stages, old/archaic language and new/modern language. The old, archaic language is now almost obscure to the present generation. Only the interested scholars and researchers are familiar with the old language. The language used in the Meitei Puyas was mostly archaic. The language of the puyas of

the period was archaic. But the language of the later period was modern and less archaic. Puyas of the early period written in archaic language were Khogjomnubi Nongarol, Konthoujam Nongarol, Poireiton Khunthok, Numit Kappa, Panthoibi Khonggul, Pakhangba Laihui, Sanamahi Laihui, Anoirol, Hijan Hirao, etc.

After Manipur converted to Hinduism during the reign of Pamheiba @ Garibniwaj, due to closer contact with the western language and literature the Meitei language underwent a change. Therefore, we find evidence of Sanskrit words being used in the writing of books.

Not only in the writing of books but also in the day-to-day life common people, foreign words made inroads into their vocabulary and began to be spoken as if in the mother tongue. In the long run it became difficult to distinguish the foreign words from the mother tongue.

Archaic words used in the puyas are now out-of-date, obsolete and dead. Except for a few scholars and researchers, the laymen will find it difficult to immediately understand the meanings of the old words. e.g. Phajaba, ningthiba (beautiful, nice) – Achralba; Pokpa (to

be born) – Shatpa, Phuiba; Hallakpa (return) – Onderakpa, Halwairakpa; Chinban (lip) – Moikai; Waa (Bamboo) – Kongyang, Langlen; Thang (Sword) – Kajeng.

Sometimes, certain things or words might have been understood differently. For example, Siba (Death) – Amal, Khamnung, Khanglenba, Nongaba, Nongmanba, Nonghamba, Pandanba; Ising (water) – I, Tarang, Irang, Tamlen, Ongthi, Inung, Iyu, Loklou, Yawa; Mei (fire) – Khellei, Khambi, Meitreng Araba, Chakmom, Yai; Nung (stone) – Khel, Chengja, Nungkhel, Thoudu etc.[74]

In some archaic Manuscripts, one word has different meanings. Tangja – lin (snake), ngak (neck), kok (head), ikaiba (shame)k mai (face), khong (foot), sam (hair), lei (tongue), etc. Punung – marep (height), chaphu (pot), puknung (mind, stomach), phurit (shirt), laphu (plantain); Samu – khong (foot), khut (hand), hakchang (body), nangal (back), ngak (neck), Kok (head), lengjum (shoulder), panggal (strength); Sawa – laibak (forehead), sho (key), tu (hair on the body), thawai panba (living).[75]

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74 Ningthoukhongjam Khelchandra, Ariba Manipuri Longei, Published by Manipur State Kala Academi, Imphal, 1978, p. 5.

75 Ibid, p. 6.

An extraordinary feature of the archaic words found in the puyas is the beautiful formation of another word by prefixing and suffixing two or three words. Let us pick up two examples. Naothemsei means lullaby. In this word, nao = naowa (child), then = themba (woo), sei = Isei (song), Another word is Lanthouyang which means 'brave in the war', Lan = landa (in war), thou = thouba (to brave), yang = yangba (swift). Such examples are produce in the archaic Manuscripts of Manipur.[76]

Another beautiful but more complex form of the archaic language is the periphrases to give a different meaning, e.g. haoshi ngamgachingba = luchingba (leader), Malem Leisna Angangba = sana (gold), Korou Nunglupal angouba =lupa (silver), Amal tharei kumba = shiba (die), Poirei taba thiba Wangam Haiman tanba = asamba thiba (look for a short cut).[77] It will be impossible to interpret the meanings of the individuals. It is essential to be acquainted with the words one by one. Else, it would be impossible to understand the puyas minutely.

Meitei script used in writing the puyas : Our revered forefathers had devised an indigenous script for writing the Puyas. Still now this script

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[76] Ibid, p. 6.
[77] Ibid, p. 7.

is known as Meitei Mayek. For writing in this script, a line is drawn horizontally and under this line a letter written hanging downward. And in making the composition, a letters are combined right and left, up and down. Brahmi Lipi style was followed by writing words from left to right.[78]

Script : At least, the Meitei scripts has been extant since the time of king Kyamba (1467-1508 AD). This is evidenced by the following fact, Cheitharol Kumbaba, the Royal Chronicle of Manipur, started written during the reign of Kyamba. This Kumbaba started recording the account of the reign Ningthoukhomba, whose son was Kyamba mentioned above. King Khagemba who reigned from 1597 AD to 1652 AD also erected a stone inscription at Khoibu, which was his royal edict. Puyas written by the contemporary maichous (scholars) like Apoi Macha, Ningthoujam Kyamba, Kanak Thengra, Salam Sana, Yumnam Tomba, Langol Lukhoi, etc. are still extent. These very facts were the reason behind the recording in Cheitharol Kumbaba that Khagemba invented Meitei text book and introduced education.

78 N. Khelchandra : Op. cit., Pp. 28-29.

Therefore, it is quite undisputable that Meitei Mayek has been in existence since the time of king Kyamba.

Meitei Muk (indigenous local made ink)

In addition to the writing materials mentioned above, Meitei muk (Manipuri ink) was an important material for writing. It was used for writing on writing plate like Meitei che, Agarbak, bamboo strip. Meitei muk is an indigenous ink, locally and manually made. It is fast, lasting, bright and highly black. Though the Puyas have become dirty, it may wash but the ink cannot be washed out with water. Below is a brief account of how the authors/writers of this land prepared their own ink, of required ingredients for preparation of ink, and of the method and process of preparing it.

The ink which was used in writing the Manipuri Manuscripts is called as *Meitei-muk* (literally and colloquially, Meitei or Manipuri ink). It was so named when the foreign ink was imported into Manipur during the pre-colonial period of the British Political Agency, that is, between 1835 to 1891 A.D.[79] The ink was also called "Kali", that is

[79] Ibid, p. 31.

referring to the blue vitriol (Cu2SO4) since it was black or dark in colour.

The Meitei ink was made with: (i) basic base or foundation material, and (ii) auxiliary materials. The auxiliary materials are described as: (a) catalytic, (b) adhesive, (c) protective, and (d) preservative materials.[80] Out of these four auxiliary materials, the first three are conservative materials and the last one is the preservative material. The basic base material is the black pigment collected from the lamp black or black soot produced while burning the pine wood.

The catalytic is a little water in which a piece of alkali is dissolved. The adhesive material is a piece of lac obtained from plants, or a small amount of rice flour can be used as the adhesive material. The protective element may be alum or nicotine which can guard the bites of insects.[81]

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80 B. Kulachandra Sharma, Op. Cit., p. 63.

81 Ibid. p.32.
"Some Khari (salt cake based on sodium bi-carbonate) is added in the lye on plain water. Then the lac secreted from a tree is put into the solution. Now the whole thing is boiled over a fire. Meanwhile, some rice-grains are baked in a wok, till they slightly char. When the colour of the rice has changed, the lac liquid is poured into the wok. Now the liquid containing lac is filtered through a cheese cloth. Then, in the filtered liquid is kneaded a piece of cloth wrapping lampblack (soot) as if kneading a paste of rice starch. In this way, ink, fit to use, is obtained."

The preservative material used in making the traditional ink may be one of these materials, *Nungshil ashangba* (blue vitriol) or *Kabo-khaji* which contains tannin.[82] The auxiliary materials and the basic base material for making *Meitei-muk* can be collected from the locally available floral and faunal materials, excepting the blue vitriol (Cu2SO4). This blue vitriol was found as the minerals with cupric-precipitation in various places of Manipur. The nature of preparation of *muk* or the traditional ink may be referred to the following para taken from the local scholar, Pandit N. Khelchandra:

"A little alkaloid solution (taken by filtration of water through the ash of plants) or a little water in which a slight lump of alkali is dissolved, and adding some pieces of lac found on the branches of tree, the mixture is boiled for a while. A handful of rice are fried on a sauce pan at about the charring stage so as to blacken. Then the boiled solution is added on to the sauce pan in which the charred rice is contained. When the solution is cooled up to the touchable stage, the solution is filtered through a cloth so that no rice grain is left. Then some lamp black wrapped in a thin cloth is dropped into the filtered

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82 B. Kulachandra Sharma, Ibid, p. 85.

solution, and is knocked with hand so as to spread its black pigments contained in the solution. It then becomes the *Meitei muk*. Such ink becomes frozen after some time but it can be made into liquid by giving heat".[83]

From the above finding, it is obvious that the conservation of Manipuri Manuscripts started from the very preparation of the writing ink. The auxiliary materials are adding for different purposes of conservation and preservation. The alkaloid solution is added for the right colour of blackness of the ink. The adhesive materials are added for gluing the black pigments on the writing paper or sheet. The protective material for conservation of the written letters is to ward off insects. The preservative materials are commonly used to have a longer life of the written letters.

The texts inscribed on the stone inscriptions found in Manipur are mostly of Meitei Script and Assami Bengali script. The two stone inscriptions erected at Ningel, one is inscribed by Meitei Script and one is inscribed by Assami Bengali script.

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[83] Ningthoukhongjam Khelchandra Singh : Op. Cit., p. 32.

Pen :

An indispensable item for writing a book is the pen. In Meitei language, the pen is called Khorjei. Such a pen was generally made by the author or writer himself. Generally the pen was made from a strip obtained from an old ‘Sanneibi’ bamboo. If the strip of the bamboo was blood red, it was ideal for making a pen. The bamboo strip selected for a pen was gradually whittled round and round and finally the tip was whittled to a sharp point. For smooth and convenient writing, the tip of the pen was usually singed in fire. This made the pen hard and lasting. Sometime instead of the Sanneibi bamboo strip, a small variety of bamboo called Kameng was used for making a pen. Kameng bamboo was hollow axially, it was more convenient to whittle

Pen made of bamboo

the tip and more suitable to handle. As for an inkpot for holding the ink used for writing, an earthen pot was baked for the purpose.[84]

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84 Ibid, p. 32.

Puya custodians of Manipur :

At the present, Puyas are available in Manipur in abundance. This availability of Puyas in abundance is due to the fact that our revered scholars and elders collected large numbers of Puyas and preserved them in their custodies. After their death, their descendants have continued the collection and preservation of Puyas in their custodies. Among the custodians preserving a large number of Puyas, mention may be made of the following :

Shallungpham Kala Memorial Manuscript Library, Shallungpham; Moirangthem Chandra Singh Pandit Achouba Memorial Manuscript Library, Khongman Pandit Leikai; Dinachandra Pandit Achouba Memorial Manuscript Library, Haobam Marak; People's Museum, Kakching; Manipur State Archives; Manipur State Kala Akademy; Custody of Ningthoukhongjam Khelchandra, Uripok; Custody of Khulem Chandrashekhar, Uripok Naoremthong; Custody of Chanam Hemchandra, Uripok Naoremthong; Custody of Puyam Punshi, Yairipok; Custody of Ningombam Manijao, Palace

Compound; Custody of Kangjam Bidhu, Kodompokpi, Luwang Nonghumsang, Singjamei Waikhom Leikai etc.[85]

The custodians mentioned above keep between 200-600 Puyas in their custody. Manipur State Kala Akademi and Manipur State Archives keep more than 1,000 Puyas each. In addition to these custodians, there are many custodians in different places, maintaining only a small number of Puyas. The places where Puyas are sparsely available are Andro, Phayeng, Sekmai, Khurkhul, Leimaram, Moirang, Kakching, Yairipok, Thoubal Athokpam, Kodompokpi, Tairenpokpi, Koutruk, Mayanglanging, Uchekon, etc.[86]

Identity of the Puya writers :

In the early days there was a tradition among our revered forefathers not to mention or write their names in the Puyas they wrote. Even now we cannot find in the sacred puyas of the Meiteis the names of the authors. When Manipur embraced Hinduism and the Meitei minds were influenced by western literature, especially by the Mahabharata and Ramayana, Meitei writers started mentioning their

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85 Information from Manipur State Archives, Govt. of Manipur.
86 Ibid.

names in the Puyas they wrote. Particularly during the reign of Maharaj Bhagyachandra and afterwards, when the old Puyas of pre-Garibniwaj period fell in bad conditions, the Hinduised authors would copy them out a new. But, in doing so, they would mention their names at the end of Mikon Thagonba, not as copiers but as authors of the newly written Puyas. But such copiers of the old Puyas can never be recognised as the real writers of the ancient Puyas. Again, when a writer wishes to mention his name in his Puya, he does so in the section of salutation.[87]

Though the writers did not mention their names in the Puyas they wrote, certain people who for aught knew who had written the Puyas, would pass the information from generation to generation by word of mouth. In this way the identity of the Puya writers could be revealed.

Below the names of some Puya writers are given along with the books they had written against their names.

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87 Naoroibam Indramani (Seminar Paper) : Op. Cit.

Writer	Book/Books
1. Apoimacha	1. Pakhangba Yangbi
	2. Taoroinai Yangbi
	3. Imoinu
2. Shamurou Chingong	Sekchin
3. Ningthoujam Kyamba	Pakhangba Thirel
4. Konok Thengra	1. Sakok
	2. Cheichat (Subika)
	3. Amam Nonglon
5. Khongnangthaba	1. Iru Laisol
	2. Atai Laisol
	3. Naheirol
	4. Anam Athou
	5. Leisemlon Ariba
6. Salam Sana	Four kinds of Sankao
7. Moirang Sathi	1. Leimarel Naoyom
	2. Leikha Nongkhalon
8. Yumnam Tomba	Chingoirol

9. Longjam Khoma (Leishang Khoma)	Sanamahi Phangkhong Tara
10. Kabui Tomba	1. Chinglon Laihui 2. Poireiton Khunthokpa
11. Thonghi-Maiba	1. Singthen, Miyat 2. Poireiton Khongphang
12. Ningombam Hichika	Poireiton Ningchit
13. Yambem Phougak	Singkak
14. Khurkhul Tebipa	Hichikka
15. Kameng Phadiba	Leimarel Sekning
16. Khwai Kekru	Khagemba Langjei
17. Langgol Lukhoi	1. Singtha 2. Latoi 3. Ningthourol Cheikhal
18. Wangoo Baji	Leithak Leikharol
19. Uchiba	Leimaren Sekning Ungoi
20. Moirang Lalhaba	1. Sanamahi Laikan 2. Sanamahi Huiroi
21. Akoijam Langmeiba	1. Pamheiba Lathup 2. Singkak

	3. Thebalon
22. Laishram Aroi and Yumnam Atibar	Samsok Ngamba
23. Nungangbam Gobindram	1. Astakal
	2. Takhel Ngamba
24. Wangkhei Gopiram	1. Meihourol
	2. Masil
25. Madhabram Wahengba	1. Langlon
	2. Chingthangkhomba Maharaj Ganga Changba
	3. Sanamanik
	4. Mahabharat Birat Parva (Birat Santhuplon)
26. Longjam Prasuram	Langoi Sagol Thaba
27. Ninthoujam Madhab	Bhakta
28. Chingkham Chaobaton	1. Chada Laihui
	2. Khahingamba
29. Haobamcha Pukhramba	Chekkhong (Nongkhrang)
30. Purnachandra Khumujamba	1. Sangai Phamang
	2. Chada Laihui (late entry)
	3. Ningthourol

	4. Ouwangamba
31. Angom Gopi	1. Parikshit (Translation) 2. Arnakand, Kiskindhya, Sundar Kand 3. Langka Kand
32. Nabananda Yubraj	Mahabharat
33. Khumbong Devkishor Chandrasidhanta	Laghu Jyotis Chandrika
34. Chirom Shyamram and Oinam Anandram	Cheitharol Kumbaba (Rewritten during Bhagyachandra's reign since the original was lost)[88]

Though the names of the writers of the above Puyas are known, there are still more than 1000 Puyas whose authors' names are not yet known. Among the books mentioned above, the translations of some books from abroad, especially the Ramayana and the Mahabharata, with an admixture of Sanskrit words, mention the names of the writers,

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[88] N. Khelchandra : Op. Cit., Pp. 118-226, *Ariba Manipuri Sahityagi Itihas*, A.K. Nodiyachand and W. Kumar, Putin 1992, Naoroibam Indramani : Op. Cit.

their addresses, the beginning date of writing and finishing date of writing. However, when the very writers wrote Puyas of local genre, they, following the tradition, did not mention their names and addresses.

The original Manuscripts were not bound. It was a single long folio folded into not less than 36 folds. The length of a folded page was 37cm and the breadth was 15cm. Notations were made in the margins on the sides. Some sheets are of varied size in length and breadth, and are made of local hand-made paper. The oldest Manuscripts were written on Agarbark which is a wooden board of Agar Balkala (*Aquilaria agallocha*). The early Manuscripts were written on small, thin, rectangular boards of agar, and were known as *Korbek* or *Korbak* in Meiteilon, and as *Sanchipat* in Assamese. No Manuscript on palm leaf have been discovered.

T.C.Hudson (1908) remarks that the Meitei word '*Che*' for paper is of foreign origin. It is a loan word from the Chinese. It is probable that the Manipuris may have learnt the use of paper and of paper making indirectly from the immigrants or traders coming in contact with the local people. Manipur had close contacts with the

Chinese since very early times. India knew the art of paper making by around the 12th to 14th Century A.D. Tsai Lun of China's invention of paper was kept secret for a long time.[89]

The transfer of technology of paper making came from China. The writing material used in Manipur were of *agar* bark, local hand-made paper and indigenous ink. In Manipur, during the reign of Meidingu Khagemba, paper making was professionalised and monopolized mainly by the Muslims. The Irong Cheshaba village is a colony of skilled hand-made paper products as cottage industry from the days of yore. Indian ink was originally Chinese. The making and preparation of ink in Manipur, though regarded as indigenous, was probably transferred from China. Local made ink was developed from lamp soot and gall. Soot of lamp burned with mustard oil was used for making ink. Different technology locally developed were put to use for the preparation of ink.[90]

The story of writing began with the use of tools, materials and methods now obsolete. Carbon ink was essentially a mixture of soot and gum or glue mixed with water. There are two types of ink, an

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89 T.C. Hudson : The Meitheis (1908), p-15.
90 B. Kulachandra Sharma : Op. Cit., p. 19.

ordinary ink which is delible and the other an indelible ink which was mostly used for writing Manuscripts and documents. In the olden days, before the introduction of nib, the scribes made small pieces from fully matured and seasoned bamboo, about 4 inches long and smoothened to facilitate constant handling. One of the ends was pointed. Such pen was locally known as *Khorjei* (*Khor*-writing; *jei*-stick).

Some of the tools of writing and illustration were bamboo splits, reeds, and quilt feather which were sharpened to fine tips. Brushes made out of the horse tail were used for painting. The material used in making local hand-made paper in Manipur was very indigenous as it was prepared out of celluloid and fibrous bark of locally available plant known as '*Su*', (a sp. of *Malvaceae*).[91]

The creation and evolution of speech and language are closely linked with the history of writing and development of alphabet to represent the sounds of the language. The line of writing will have pattern. The finest scripts are likely to show a relationship of parts to the whole, consistency and regularity in size, proportion, slant and

[91] Mutua Bahadur, Illustrated Manuscripts of Manipur (2005), p. 12.

spacing or the word “unity”. There is the background as well as the margin. The margins are important as a means of setting writing.

The circumstances of the origin of alphabet are still not known. But the palaeographic findings, no doubt, give us a way to understand the development of writing and the use of alphabet according to the prevailing languages. It is rather strange that in old or medieval Manipur Manuscripts, there are no paragraphs. Letters are just written in lines as the reader is to group them into words while reading.

Illustrated Manuscripts

An illusstrated Manuscript is a book written and decorated by hand. Its name had derived from the Latin ‘manus’ meaning ‘hand’ and ‘scriptus’ meaning ‘writing’. Manuscripts which were decorated with gold, silver or bright paint are called as Illuminated Manuscripts, derived from the Latin word ‘illuminare’ meaning ‘to lighten or brighten up’. For instance, in Manuscripts like the *Subika*, colourful illustrative objects of humans, animals and flowers are found. To further enliven the text, the margins of the pages were often adorned with decorated borders. Their decoration varied from small line

drawings of a whimsical character, known as "drolleries", to elaborately painted floral patterns filling the entire border.

Manuscripts of this type are in cordex structures, stitched together along one edge. The margin around the text was found to be often illuminated with lines of varied forms and foliate designs.[92] A sample of such type of Manuscript is reproduced here.

Sample of illustrative Manuscripts

A sample of illustrative Manuscript of Manipur decorated various colours with borders on the margin

92 Note : This information has been collected from the website of PAULUS SWAEN.COM – About the Medieval Manuscripts with reference to the western countries and their forms of illustrative Manuscripts developed during medieval period. Such forms of illustrative arts were evident in the puya of the meiteis community in ancient yore.

Illustration from Subika Leishaba

Illustrations from Subika Cheithin

Illustrated Manuscripts are another landmark of archival importance on the influence of Trantrism and Hinduism. It belongs to pre-Vaishnavism/pre-Garibaniwaj period. Some of the significant illustrated Manuscripts produced during this period are *Paphals*, *Subika*, *Theng-khous*, *Kairen Keijao*, *Khultou*, etc. Other illustrated Manuscripts are *Khabi*, *Thiren* and *Paphal Lambuba*.

The Subika Manuscript was dated to have been written with simple illustration during the 16th Century A.D. All the illustrations are done in simple lines echoing folk motif with simple and single line decoration, and the colouring is dominantly red and yellow. There are many Manuscripts of Subika. However, they vary in the way of presentation. Pictographical structures do differ.[93]

The Paphal illustrations depict the traits of Austric culture. The Khmers or Khamaran in Manipur used to understand the Mon groups of Myanmar. They had migrated to Manipur around circa 1000 B.C. and their traditions were assimilated in the cultural traits of the Meitei.[94]

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93 Mutua Bahadur & P. Gunidro : Op. Cit., p. 63.
94 Mutua Bahadur : Op. Cit., p. 10.

It is believed that the original *Subika* was written on Agar bark (*Korbak*) by around the 16th Century A.D. The number of alphabets used in writing Manuscripts of the pre-Garibaniwaj phase were observed to have increased to 33. The archaic Meitei script was fully developed by around the 16th Century A.D. However, today the approved number of alphabets in Meiteilon language are twenty seven only.

Manipur is geographically and culturally situated between two great cultural traditions of South Asia and South East Asia. This geographical location has been an important factor in the development of a culture with a strong indigenous flavour. The level of assimilation of the people of the North East in general, and Manipur in particular, into Hindu religion and Indian culture differed from people to people, and from plains to hills. Aryanisation of the mongoloid culture reached its peak during the eighteenth century when Hinduism became the most dominant religion in the central Manipur valley. However, with the advent of British colonialism the entire region was strategically associated with South Asia. Manipur, as early as the 15th Century A.D., had close relationship with Burma and China.

Based on the findings of local scholars as well as foreign writers including leading authorities on Tibeto-Burman language of this millennium, there is no scientific evidence of the influence of Chinese way of writing in the form of alphabets of the Meitei script. The outer form of Meitei scripts is quite different from that of any other alphabet of the world. The different outer form of the ancient and modern Indian alphabets given in Bharatiya *Prachin lipimala* revealed that this alphabet is different from other Indian system. Therefore, the Meitei script is purely indigenous which developed in the soil of its own.

Many historical and cultural written literatures were destroyed at the early period of the 18th Century A.D. Four major epoch making encounters in Manipur's history, the Ava invasion and consequently the seven years' devastation of Manipur; turmoils in the 17th Century A.D., conversion into Hinduism and its impacts on the traditional resources including Manuscripts during the 18th Century; and the annexation of Manipur by the British in 1891 A.D. and subsequently Manipur's merger with India. These encounters are socio-political paradigms made untraceable.

Though the clear evidence for writing in ancient Manipur is available as early as 15th century, the Manuscripts now available are hardly older than 200 to 500 years because of the fragile nature of the material used for writing. From the middle of the 20th Century, the Manipuri language was written with Bengali alphabet. Most of the modern Manuscripts are mostly written in the Bengali/Assamese scripts.

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CHAPTER - III

Factors of Deterioration

Paper is an easily perishable material. It can be torn, burnt, water damaged, stained and attacked by biological agents. Paper and its product like Manuscripts pose with multifarious problems.[95] It has the Tendency to deteriorate by virtue of its chemical constituents.[96] So, the Manuscripts of Manipur now kept in the Archives, Museums and private custodians are found to be deteriorated by different factors such as (a) Natural or Physical Factors, (b) Biological Factors, (c) Chemical Factors, and (d) Artificial Factors. Everything on this earth has a

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95 National Archives of India (1993), Conservation of Paper Materials, p. 7.

96 R.S. Singh, Ph. D. (Museology) Scientist-NISTD, New Delhi – Conservation of Documents in Libraries, Archieves and Museums, p. 42.

limited/defined life. Physical deterioration is a natural process and this can't be bypassed.[97]

The first three are the major factors which spoil most of the Manuscripts, and the last is the least factor which deteriorate Manuscripts by carelessness. The broad division cited above can be further subdivided into :

1. Natural or Physical Factors

It is noticed that with time, paper gets physically weak and brittle.[98] The main factors are –

i) Natural or physical objects used in making the writing materials (paper, ink, etc).

ii) Climate and weather to which the Manuscripts are exposed.

iii) Vegetation (fungi and algae), and

iv) Natural calamities such as flood, earthquake and fire.

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97 www.ignca.gov.in – Cultural Informations, Indira Gandhi Centre for the Arts.

98 O.P. Agrawal & Mandana Barkeshli INTACH (1997) – Conservation of Books, Manuscripts and Paper Documents, p. 43.

2. Biological Factors

In tropical countries, biological agents cause great damage to paper materials which on account of their properties are easily damaged. The main factors are[99] –

i) Insects that bite and eat up the written books or Manuscripts.

ii) Animals which bite, tear folios of Manuscripts, and

iii) Wars and battles.

3. Chemical Factors

i) Due to the acidic nature in the components of the writing materials.

ii) Impure air which contains harmful chemical to the constituents of the writing materials.

iii) Dust which naturally dirtied the Manuscripts, and

iv) Harmful gas which might harm the Manuscripts.

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[99] Ibid, p. 31.

4. Artificial Factors

i) Careless handling and use of the Manuscripts and its folios.

ii) Folding the folios of the Manuscript.

iii) Marking, unusual writing, etc. on the pages of the Manuscripts.

iv) Disorderly, unhabituated and unnatural keeping in the cases or shelves of the Manuscript and wrapping the same and putting it in the container, as well as careless settings of the handwritten books.

v) Not cleaning the dust, soot, soils falling, smearing, etc. on the pages of the Manuscripts with timely checking.

vi) Not having routine and occasional checking of the Manuscript by opening the pages.

vii) Not following up the prescribed regulations in the general and ordinary notion and common sense for the preservation, consolidation and protection of the Manuscript.

viii) Accidental happenings such as slipping away from hand, falling by slipping down the holders in water, fire, filthy spots or dirty materials.

ix) Keeping the container of the Manuscripts at a place or in a condition and position which may inflict damages, and

x) Intentional incendiary.

The above factors of deterioration of Manuscripts react on the handwritten perishable materials knowingly or unknowingly. The factor-wise description so far found occurring in Manipur as regards to the conservation of Manuscript are outlined as follows:

1. Natural or Physical Factors

The factors which contribute to the deteriorating effect on the Manuscripts are mostly the natural energies like light (sunshine, the direct or defused lights), heat (temperature, hotness, etc.), wind or air, and the weather and climatic conditions. The materials and energies which act as agents towards deterioration of the Manuscripts are described as hereunder –

i) Climatic conditions of Manipur

Geographically, Manipur lies in a sub-tropical zone. The rainfall in the State varies from around 110cm to 350cm, and the annual average rainfall is about 207.77cm.[100] The average rainfall commences from the Manipuri lunar month of *Shajibu* (corresponding to the Gregorian calendar month of the 2nd and first halves of April and May respectively) and continues up to *Mera* (October-November). The perceived temperature in Manipur varies from a minimum of 3°C to around a maximum of 36°C in the year. Ukhrul and Tamenglong Districts receive the highest rainfall in the hill State. Rainfall is in general prevalent during the months from May to September under influence of the strong current of the south-west Monsoon[101].

The rainfall is in general prevalent during the months from May to September when the land of Manipur is under the influence of the strong current of the south-west Monsoon. This monsoon determines the success and failure of crops as its agricultural, cultivating etc. fields are under the rainfall. With regard 1 to the state of inclusion of the

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100 M.T. Laiba : The Geography of Manipur (Imphal-1992), p. 110.
101 Ibid, p. 110.

climate of Manipur the classification of the Q international climatic division it is provided.

According to the Koeppen's classification of world's climatic division, the state (Manipur) falls in the climatic group of "CWA" (i.e. sub-tropical monsoon, mild winter, dry winter, hot summer).

The provider of the above climatic state of Manipur, keeping his views and observations on the relief temperature, rainfall and natural vegetable of Manipur, divides into the Macroclimatic regions of this state as the following.

A) Sub-tropical monsoon rain forest climate :- (Wet and hot summer, dry winter), and

B) Sub-Tropical monsoonal highland temperate climate :- (Wet and mild summer, dry and cold winter).

A) Sub-tropical Monsoon Rain Forest climate

It covers the valley areas as well as low lying foothill regions where subtropical forest and tropical semi ever green forest predominantly occur. Bamboos are largely grown there. In this area large number of swamps as well as arable lands are also located. It is

marked by tropical climate with hot and wet summer. But the valley is not too hot due to its high elevation above the sea level and prevailing of cold air current from its surrounding high hills except in the rainless sunny days. Usually nights are tolerable with the air current down the valley which results in fog formation during the early morning hours, specially in winter seasons. The wettest and the hottest months are July and August and the driest and the coldest months are December and January.

The highest temperature goes above 34°C in the months of July and August, the lowest goes down to below freezing point in the months of December and January, specially in the early morning. So dew, fogs and mists are visible in plenty during these months. The annual average rainfall in the valley is about 100 cms.

B) Sub-tropical monsoonal Highland Temperate Climate

It covers all the highland areas of the surrounding hills such as northern hilly portions; eastern hilly portions; western hilly portions and southern hilly portion of the Manipur state where tropical moist-deciduous trees with secondary growth as well as sub-tropical pine forest are predominantly found in, large quantities.

It is also marked by temperate climate with mild wet summer and cold winter due to its high elevation from the neighbouring plain areas as well as the thick vegetation colours. The average annual rainfall in the hilly area of Manipur is C. 200cms and maximum temperature is about 30°C in the month of July.

ii) Vegetation (fungi & algae)

Manipur is quite rich in floral and faunal wealth. Several botanists from outside Manipur have visited the State in their search for new floral species. So, many foreign Botanists have visited Manipur in their interest for searching for new floral species & researching new knowledges for floral known & unknown, explored & unexplored or identified plants. With regards to the characteristics of the forest of Manipur, Frank Kingdonward said in 1952.[102]

iii) Natural calamities

Natural calamities are the disasters and afflictions caused by natural phenomena, such as heavy rainfall causing flash floods, earthquakes, fire outbreak, landslide, depression of land, etc. These are

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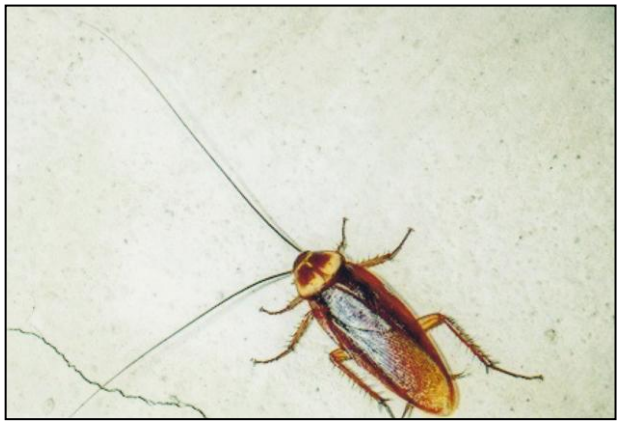
[102] Frank Kingdonward, Plant Hunter in Manipur (London-1952), p. 29.

reasons for the deterioration of the material heritage of the State including the old Manuscripts in compact mass or in large numbers.

2. Biological Factor



Cockroach
Scientific Name : *Blattaria*

The biological factors or agents for deterioration of Manuscripts are the acts or inflictions by the living creatures such as animals, insects, etc. Insects such as cockroaches, silver fish & book worms. The most devastating are the termites which may damage full stacks of library materials in no time other biological agents are rodents like rats.[103] The greatest act of inflicting loss of important documents including Manuscripts are caused by human beings in the form of wars and battles.

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[103] O.P. Agrawal and Mandana Barkeshli, Op. Cit., p. 31.

i) Insects

Insects which bite, cut or eat the sheets of the Manuscripts rendering these into broken pieces and fragments are cockroaches, spider, termites or white ants, ants, centipede, silver fish, and worms like book-louse/lice, book-scorpion, bookworm [a beetle larva (Anobium)], etc. These insects and worms gnaw and torment the leaves/sheets of the Manuscripts.[104]

Silverfish
Scientific Name : *Lepisma saccharina*

ii) Animals

Animals, mostly small vertebrates like mice or rats, and mole bite and gnaw at the sheets of the old Manuscripts, rendering these more severely damaged

Rat
Scientific Name : *Rattus*

[104] National Archives of India, Conservation of paper materials, 1993, Pp. 7-10.

than as inflicted by insects and worms. Rodents which infest Manuscripts belong to the family Muridae. The most frequently found species is the Mus musculus or small domestic mouse.[105] They not only tear and bite the folios of the Manuscripts, they sometimes carry away the sheets with them to their holes or burrows. Rats are a major threat to all types of books, Manuscripts and other organic materials.[106]

iii) Wars and Battles

Wars become a main factor for the mass damage to standing properties including Manuscripts. Acute damages to the Archives and Libraries during war time or violent conflicts cause extensive damages to important documents including the old Manuscripts, printed books, etc.[107] A search for the old Manuscripts was taken up soon after the end of the Anglo-Manipuri War of 1891. The then British Political Agent in Manipur, Major H.P. Maxwel made an effort at locating the old Manuscripts. The royal chronicle of Manipur, the Cheitharol Kumbaba cites that on Monday, the 24th of Eenga in 1813 saka (corresponding roughly to June 30th in 1891) all the Manuscripts kept

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105 S.P. Singh, R.C. Jain, Vibhash Kumar : Conservation of Illustrated Manuscripts, p. 34.

106 O.P. Agarwal & Mandana Barkeshli, Op. Cit., p. 41.

107 Km. L. Dhanapati Devi, Ariba Potshingbu Leeshingbagee Chekshil Thourang (Imphal-1987), p. 28.

in the royal archives located at the Rasa-Mandal were carried away to different private custodians. The Manuscripts were brought back to their original places, thanks to tireless effort by Khuraijamba, the former manager of Lallup duty.[108]

3. Chemical Factors

Paper being an organic hygroscopic substance is liable to deteriorate.[109] The chemical factors of deterioration of the Manuscripts are basically accentuated by the lack of knowledge on the latest scientific knowledge by the scholars especially during the 1970s. Brief accounts of some of the reasons of deterioration of the Manuscripts by chemical reasons are detailed as below:

i) Impure Air

Impure air means the air which is not worth breathing or inspiration by the living beings, both animals and humans. Impure air containing harmful chemicals in strong concentration inflicts acute damages on the surface of paper which is the constituent of the writing

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108 Lm. (L) Ibungohal & N. Khelchandra Singh : Op. Cit., p. 499.

109 Swarnakamal – Protection & Conservation of Museum Collection : Museum & Picture Gallery, Baroda (1975), p. 140.

material or its textural fabrics. Thus impure air becomes an important factor of deterioration of the Manuscripts.

ii) Dust

Dust is the powdered pieces of earth or soil and the charred or burnt remains of wood, etc. The particles of dust are very small and when these particles are smoked they turned into soot. They not only dirtied and make filthy the surface of the sheets of the Manuscripts, but they also corrode the leaves of the Manuscripts. Thus, dust affectively deteriorates the sheets of the Manuscripts. Apart from these, dust also acts as a nucleus around which water/moisture collects. These moisture provides the necessary humidity for growth of fungus and for chemical reactions which lead to formation of acides.[110]

iii) Harmful Gas

The harmful gases are the steam-like matters which evolves from the surface of poisonous and injurious matters especially liquids in their transformation of state of innate as are found in existence in this universe. If the content of the gases are harmful to the constituent

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[110] Mrs. Mallika Mitra, Chief Conservator, ICI OACC, Bhubaneswar : Factors of Deterioration Dust and Atmospheric Pollution (Seminar Paper).

of the sheets of the handwritten books, these become agents of deterioration of the Manuscripts. Sulphur-dioxide, hydrogen sulphite, carbon-dioxide suspended in air etc. are the sources of great danger to documents. When the sulphur and carbon-dioxides came into contact with the atmospheric moisture undergo the process of hydrolysis and finally yield sulphuric acid and carbonic acid, which ultimately bring acidity of paper and thus resulted brittleness to paper.[111] Usually, Meiteis take these gases as the bad smelling gasses.

4. Artificial Factors

The artificial factors of deterioration of the Manuscripts are the acts or things that are done by men knowingly and unknowingly.

i) Careless handling and use – Besides the natural environmental factors, human negligence or ignorance of proper steps in handling is very important. Rough handling may cause unaccountable damage.[112] The careless handling and use of Manuscripts appear to be a habitual practice as this happens everywhere. Normally, people handle the Manuscripts carelessly with their unclean hands that might contribute

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111 Smt. K. Sobita Devi, Curator, Manipur State Museum, Govt. of Manipur : Traditional Methods of Preservation of the Historical Records & Documents in 18th & 19th Century, p. 12.

112 Dr. M.L. Nigam : Fundamental of Museology, Hyderabad (1985), p. 77.

towards deterioration of the Manuscript or its folios. Lastly a great deal of deterioration to the paper objects is also caused directly or indirectly by human being. These factors become quite alarming as they are the result of faulty approaches and use of cheap materials e.g. cello tape for mending tears.[113]

ii) Folding of the folios

Physical damage is caused to books and Manuscripts due to mishandling or improper storage, Precautions have to be observed while turning over the pages. It must always be ensured that while opening the Manuscript or the books, folios or pages are not form or corners are not damaged. They should never be folded otherwise creases will be formed and they may even be formed at the folds. For carrying a large number of Manuscripts from one place to the other, trolleys should be used, they should not be taken in hands.[114] Unintentional careless folding of the corners of the folios of Manuscripts for looking out the concerned passages or paras. Folding of the corners of the folios in a rough manner cause damages to the textural fabrics and the written lines. This could also spoil the

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113 National Archives of India : Op. Cit., p. 11.
114 O.P. Agrawal & Mandana Markeshli : Op. Cit., p. 68.

alphabetic characters by rubbing or erasing these from their positions in the lines of folding.

iii) Marking and unusual writing

Marking for importance and making unusual notes on the folios of the Manuscripts are factors for contributing towards deterioration of the folios of the old Manuscripts. The habit of marking or making unusual notes on the folios could create confusion on the given passages of the Manuscripts, while it could be said that these habits obtensiously attacks on the physical body and property of the folios and its fabrics.

iv) Disorderly, improper maintenance

The folios of the Manuscripts are to maintain in order of the numbers of the marking on the side of the folios or on the second pages of the Manuscripts. Manuscripts are usually wrapped in red cloth for proper maintenance and safe custody. Disorderly of improper maintenance without extra wrappings or proper fitting on the shelves could contribute towards the deterioration of the old Manuscripts.

v) Non-cleaning and clearing of dust

Dust, soot and other filthy particles when not cleaned or cleared sufficiently from time to time could contribute immensely towards the gradual deterioration of the old Manuscripts. Dust has a heterogeneous and variable composition. It usually contains chemical particles, insect eggs, micro-organism spores & flower pollens. Elements of biological & chemical origin contained in the dust can damage Manuscripts and in order to prevent this, the Manuscripts should be dusted regularly & this is to be carried out with vacuum cleaner or by using soft brush.[115]

vi) Not having routine/occasional checking

Very often if the Manuscripts while in storage are not examined periodically; it may give rise to complications. Moreover, one does not know what is happening inside a storage unless it is opened and the Manuscripts are checked periodically. Sometimes rodents like rats, etc. get entry somehow and trapped inside the storage cases. In panic these may damage the Manuscripts stored inside.[116]

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115 Romita Khuraijam, Conservator, MSA, MCC, Imphal (Seminar Paper)-Bio-deterioration of Paper MSS and it's control.

116 V.P. Dwivedi – Museums and Museology : New Horizons (1980), p. 190.

So, a routine and timely check of the positions and the condition of the Manuscripts could prevent damage to the Manuscripts. Manuscripts can deteriorate due to negligence on the part of the custodians. If routine checking of the Manuscripts by opening the folios and separating of the folios is not done, the folios are liable to get stuck to one together encouraging growth of moulds, mildew, etc., and other types of fungi, algae or pest and other micro-organisms may also creep in to live in the neglected folios wherein they could eat or gnaw the leaves of the folios. Thus, not having a schedule for the routine as well as occasional checking of the Manuscripts by opening each folio could be a major factors for the gradual or rapid deterioration of the Manuscripts.

vii) Not following the prescribed regulations

The prescribed regulations mean the rules provided for preservation, conservation and protection of the Manuscripts either in private or public custody. The rules, either in a written code or as understood orally, are found embedded in the traditional norms, or the conventional ways and customary patterns and trends. Other than the methods of traditional ways of conservation of Manuscripts, scientific

methods of conservation have also been drafted by the National Mission for Manuscripts, New Delhi. Over and above the then modern methods of customary systematic measures of scientific methods are also afforded by the National Archives of India from time to time.[117] A non-compliance of the rules, or say a conscious neglect of the rules could contribute to the deterioration of the Manuscripts.

viii) Accidental happenings

Accidental slipping from the hands of the holder or an accidental falling down of the holder of the Manuscripts could cause damage to the Manuscripts, particularly when the Manuscripts accidentally drop into water or into the fireplace while the holder is carrying the Mansucripts around. The rare and valuable old Manuscripts are to be handled with care at all times, especially while carrying, or transporting the fragile Manuscripts from one place to another particularly in spots expose to rain, water, fire or wind.

ix) Putting the container in the right place

The receptacles of the Manuscripts are to be kept in the right place where the conditions for proper preservation and conservation

[117] National Archives of India, Conservation of Paper Materials (1993), Pp. 7-10.

are fulfilled, such as in consideration of climatic conditions, temperature, etc. Putting the container of the Manuscripts at the right place, position and condition could prevent harmful or destructive effects on the Manuscripts.

x) Intentional incendiary

The act of intentional incendiary is largely carried out by adversaries with a deliberate purpose to subdue a dominant culture. Although such events do not occur frequently, we cannot say that this would not happen at present or in the future. Incendiary or the wilful burning of rare books, Manuscripts and Libraries are evidenced by events that happened in historical periods. One of the most famous accounts in this regard is given as below:[118]

Shih-Wang-Ti abolished the old feudal system which was originally introduced by Emperer Yu of Hia (circa 2208-2198 B.C.), and the monarch prohibited the study of Confucious. In 214 B.C. the Emperor issued orders to seize and destroy all the classical books, particularly those of Confucious, except the books on agriculture, medicine and the divining arts. He did not spare books containing ideas

[118] P. Gogoi : Op. Cit., p. 37.

in support of feudalism. Huge stacks of seized books were burnt to ashes. To avoid the penalty of death, the book-sellers throughout the empire closed their shops and burnt their books. The Emperor ordered four hundred and sixty scholars of letters to be buried alive, probably because they had opposed his mad act of destruction of the valuable ancient writings. The Emperor even punished his own son Hu-Su with imprisonment for expressing disapproval of his measures.

This act of intentional incendiary happened two times in Manipur. The first event of burning Manuscripts was carried out on a Sunday corresponding to a date in the first week of November in 1732 A.D.[119], and the second incident of incendiary was executed in July of 1891 A.D. Intentional incendiary thus acted as a major factor for the loss of a number of valuable Manuscripts.[120]

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[119] Lm. (L) Ibungohal & N. Khelchandra Singh : Op. Cit., p. 92
[120] K. Dhana Singh, Meitei Puya Wari Machang, Imphal, 1974, p. 17.

CHAPTER – IV

Indigenous Practices and Material for Conservation of Manuscripts in Manipur

Manipuris, in specific the ethnic Meiteis, had the sense of keeping record with reference to the accounts or happenings of past events, such as military expeditions of a king or important socio-political happenings in the kingdom. The written records such as *Puyas* (old Manuscripts), paintings in miniature like *Subika*, and *Paphal* paintings are found scattered in Manipur, particularly in the central Manipur valley areas. On the basis of these material properties, the history of Manuscripts in Manipur can broadly be divided under two

phases, namely, the traditional Meitei religious period and the Meitei Hinduised period.

The written records are in different kinds or made, such as of handmade paper, palm-leaf, birch-bark, stone, map, documentary material, etc. The royal chronicle of Manipur, *Cheitharol Kumbaba*, recounts that the Meiteis started recording the chronicular events of Manipur since the time of the king Nongda Lairen Pakhangba in 33 A.D. It clearly shows that our forefathers were quite conscious of keeping records with an idea of preserving their history. They also had a sound knowledge of preserving these Manuscripts with their indigenous methods. Most of the custodians or writers of the Manuscripts applied their indigenous skill and knowledge. In later periods they practiced imported techniques for the preservation of the Manuscripts.

Most of the old Manuscripts written on handmade paper, birch bark, Tengna leaves and bamboo, etc. are languishing because of the ignorance of the climatic conditions of Manipur on the part of the custodians. Almost all of the custodians of old Manuscripts are relatively unaware of the new scientific knowledge on how to maintain

the Manuscripts, as well as the preservatives to be used in order to maintain them properly without further deterioration. Due to their poor knowledge and understanding of maintaining and conserving the written records, many of the old Manuscripts are affected by several deteriorating factors mostly arising out of unsuitability of climatic conditions. Though these are some of the factors faced by the local custodians, they do practice the indigenous methods of preservation of Manuscripts based on the oral traditions.

Most of the old Manuscripts found written on handmade paper, Tengna leaves, birch bark and bamboo, etc. are languishing because of the ignorance, neglect and improper care by their custodians in an environment setting that is not favourable to the fragile documents. It is a well known fact that preservation of Manuscripts is a serious concern for their custodians. They consider the old Manuscripts as their most precious material and cultural properties. Ever since human beings acquired the knowledge of writing, the problem of preservation of such priceless cultural properties has been a major issue.

As the Manipuri script, which is known as *Meetei Mayek*, was developed in the 15th Century A.D., the old Manuscripts so far

collected and documented are found mostly written on handmade papers. Manuscripts written on seasoned bamboo splits, Tengna leaves and other material are found to have been in use prior to handmade paper in Manipur.

An attempt has been made here to highlight the effectiveness of the indigenous methods of preservation of Manuscripts on locally hand made papers based specifically on the oral traditions.

Before moving indepth into the subject, it would be appropriate to examine the followings -

i) The prevailing eco-climatic conditions of Manipur, meaning thereby the sub-tropical climatic condition, the high humidity, and the polluted environment which are primary factors not conducive to the conservation of the old Manuscripts particularly written on handmade paper.

ii) The established basic knowledge, that is, the sources of the known and the unknown, or the factors of damage or deterioration of the Manuscripts, such as light, heat, dust and humidity.

Indigenous Practices for Conservation

The skill and knowledge of preservation and conservation of Manuscripts in Manipur by the local custodians or writers are unique practices to upkeep their Manuscripts. The valley based inhabitants are quite aware of the basic factors of deterioration of important documents such as the old Manuscripts from factors such as light, dust, heat and humidity. The practices of conservation of Manuscripts is quite indigenous and far from influence from outside.

Our revered forefathers had preserved centuries old Manuscripts for the benefit of the posterity and endeavoured to enhance their durability by applying indigenous technique of preservation. It is due to their selfless dedication that thousands of puyas are still exist. By virtues of these preserved Puyas the present generation has been able to make research on the ethnic culture, history, ancestry, custom and tradition.[121]

Generally, rainfall in Manipur was high, humidity also was high, because of which the Manuscripts were damaged and impaired by the mould and mildew. The silverfish which is the greatest enemy of

[121] Naoroibam Indramani (Seminar paper) : Op. Cit.

Manuscripts bit and bored the leaves of the Puyas rendering them unreadable. Rats and termites also greatly harmed the Manuscripts. Against these dangers, our forefathers tried their level best to protect and preserve the Manuscripts.[122]

The Puyas were mostly written on Meitei che (Manipuri paper) and Agarbak. The number of Puyas written on Meitei che was far greater than that of the Puyas written on Agarbak. And the number of Puyas written on Tengna leaf and bamboo split was very few. The writing materials were mostly of plant products. So, a very small insect, called mite used to attack and damage the Manuscripts written on these writing materials.

For protection against mould, and insects, Puya experts and custodians resorted to indigenous preservation technique.

The preservation of Manuscripts for a long time can be studied on two ways. They are, (1) presence of self preservation quality in the Manuscripts themselves, and (2) measures undertaken by Puya experts and custodians for permanent conservation.

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122 Sorojini Devi, Ariba Potsing Leesinbagi Waram, 1984, p. 16.

1. Presence of self preservation quality in the Puyas :

Preparation for preserving the Manuscripts for a long duration has already started from the very moment the Puyas are written. Almost all the Puyas extant in Manipur were written on Meitei che. For manufacturing this very essential writing material, the fibres/pulps to be moulded are first soaked in water. On account for this tradition of soaking the fibres/pulps in water, acid is almost absent in the Meitei che. Paper which we obtain from the mill in the market generally contains acid. Acidless paper is very costly and hard to obtain. If acid is present in the paper meant for writing, its white colour will disappear after some time and red colour will appear instead. Finally the paper will become brittle. In short, acidic paper cannot be conserved for a long duration. Since Meitei che is moulded in the water, it is free of acid, of course and can be conserved generation after generation in a healthy condition. This is the special quality of the Meitei che.

After the moulding of Meitei che is finished, it is indispensable to treat it with the starch of rice in order to stiffen and strengthen. But the mite and other insects are very fond of rice starch. In order to eat

the starch, they will bore the paper and the book written on that paper will be rendered illegible. The starch to be used to treat the Meitei che should be of the most tasteless varieties of rice, namely, Iroiya and Tumai. Mites and other insects are very much averse to starch made from the cooked rice of Iroiya or Tumai. Therefore, Meitei che, treated with the starch of Iroiya or Tumai rice, can endure for centuries and for many generations. This is, indeed, an example of the technique, farsightedness and extreme carefulness on the part of our forefathers.[123]

Next to Meitei che, the important writing materials used in plenty is Agarbak. As Agarbak is made from the bark of agar (aloes), it is prey to the mite. Therefore, to prevent it from being eaten by the mite, it is soaked in cow urine for about one week. By seasoning thus, it may be used as a writing plate.[124]

Tengna leaf also an important writing material used as a writing plate. Tengna is very much prone to mite attack. Therefore, to prevent it from mite attack, it is at first seasoned in cow urine for about one

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123 N. Indramani (Seminar Paper) : Op. Cit.

124 Information from personal interview with Pandit Achouba Ng. Kulachandra, Akham Village.

week. Then only, it is prepared for using as a writing plate. This method of seasoning the tengna leaf for protection from the attack of the mite was a technique to conserve the Manuscripts for a long time.

The paper and Agarbak was written on in ink which was manually self made. If the writing ink contains acid, the book written in that gets abraded in the spaces where letters are marked. The book will then be full of cavities and its life becomes short. So, when our elders make ink, they add into it the lye made from the ash to burnt Khujumpere (chaff plant) or plantain starch or pea plant. Instead of the lye, Khari (sodium bicarbonate salt cake) may also be used. Since the lye contains alkali, the indigenous Meitei muk (Manipuri ink) is acid free. So, the Letters written in the Puya with acid free ink are not damaged and impaired. Also the bamboo strip pen can write with ease, if acid free ink is used. In making Meitei muk, live lac secreted from the tree is also mixed. This enhances the fastness of colour and the tightness of the ink itself.[125]

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[125] N. Indramani : Op. Cit.

2. Measures undertaken by Puya experts and custodians for permanent conservation:

Our venerated forefathers undertook the following measures for conservation and preservation of the Manuscripts for the future generation.

(a) Binding the Puya with thread :

We have already discussed how the leaves of the Manuscripts are handed in two ways. Since the leaves of the Puyas in 'Latam' are apart from one another, if they are not maintained properly, they may become mixed up, displaced and quite confused. As a result, the Puyas may become rendered quite useless. To avoid this inconvenience, the books in 'Latam' are kept separately after the leaves of each book are separately bound by thread. This measure will help to prevent the Puyas from being mixed up.[126]

Binding Manuscript with thread

126 Ibid.

(b) Compressing the puya between the planks :

Another method of conserve the Manuscripts for a long time is to compress each of them separately between tow planks having the size of the respective books. Then the planks are bound with a rope tightly. This measure helps to keep the leaves of puyas fresh, stiff and straight. The binding of the planks tight by the rope prevents the water vapour in the air from coming into contact with the moisture present in the book itself. [Humidity in Manipur is very high.] This measure also prevents the Puya between the planks from absorbing the water vapour in the air. This prevention of water vapour absorption protects the Manuscripts from the mould which can damage the leaves of the Puya.

After compressing between the planks

This method also greatly helps to prevent the leaves of the manuscript from decaying due to the mould. The compression by the planks prevents insects from entering the leaves of the book very easily and hence from biting and harming the leaves. Further, this measure keeps the necessary moisture content in the book itself balanced and constant. Moreover, fire cannot burn the book suddenly and immediately as it is protected by the planks.[127]

Binding the Puya between the planks

127 Ibid.

(c) Wrapping of the Manuscript with cloth :

Wrapping of the Manuscript in cloth served to protect them from dust, worms and to a great extent from the effects of humidity and absorption of acidic fumes. The wrapping cloth was usually red in colour.

After the completion of carpentering the wooden boards of the Manuscript, it is then carefully placed between the two boards. A sheet of cloth measuring around 50x60 centimeters is stitched in the right size for wrapping the Manuscript along with the boards. The borders of the cloth is to be stitched with needle. A string made from rolls of cloth, about the size of half a centimeter, is also stitched along one of the four corners of the cloth. The string is also made from strands of thread which is then tied to one of the corners of the sheet by knotting together so as to form a tail.

After the stitching of the wrapper is completed, the Manuscript that had been placed in between the wooden boards is set at the centre of the wrapper cloth which is arranged in a horizontal position. The conical ends of the spread wrapper that lies on either sides of the Manuscript are folded over and across the Manuscript in such a way

that they cover the bet part of the Manuscript except for backside or the underlying side of the Manuscript. Thereafter, the conical end of the cloth which lies opposite to the body of the custodian is also folded in a proper way. The conical end which has the string lying on the side of the writer is folded in the roll. The string is then encircled around the breath-wise feature of the wrapper so as to fasten the cover of the Manuscript.[128]

Our elders used to wrap the Manuscripts with cloths all round the planks tied very tightly. This measure again prevents the water vapour outside from coming into close contact with the Manuscripts. Outside weather condition also cannot affect them. Moreover, insects like the bright. Silverfish are rendered unable to enter the book and bite and impair it. Further, this step protects the book from dirt, dust and decay.[129]

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128 Ibid.
129 Ibid.

Keeping the Manuscripts on the cloth

Folding the cloth

Wrapping the Manuscript with cloth

After wrapping with cloth

(d) Keeping the Manuscript inside a Tabu (a basket with a cover) :

Our elders used to keep the Manuscripts, that had already been clasped with planks and further wrapped with cloths all over, in a Tabu made of 'Kanam Paya' (thin, long bamboo slice made from outer layer of bamboo). This measure was a further step to protect the Puyas from the harmful effects of day-to-day weather conditions, and to prevent the absorption of water vapour by the Puyas from outside. This measure rendered the destructive rats and mice unable to bite and damage the Manuscripts. Moreover, insects could not infiltrate the Manuscripts.[130] The elders kept the basket (Tabu) containing the Manuscripts on a type of scaffold made of wood, raised high from the ground. This raised, scaffold was known as 'Lop'. In early days, most people dwelt in the traditional Meitei house called Meitei Yumjao (big house), with a front slanting roof called 'Laikhan'. At that time every house had this 'Lop' built over the kitchen. This 'Lop' was meant for storing or preserving articles, grains and the like. Since there was always fire in the kitchen for cooking morning and evening meals, the

130 Ibid.

Manuscripts in the ‘Tabu’ kept on the ‘Lap’ got heat daily, regularly. This made the Manuscripts inside the Tabu (bakset) dry and desiccated. As a result, mould and mildew could not impair and damage the leaves of the Manuscripts. Being raised high from the ground, dampness of the ground could not dampen the Manuscripts and during flood, water could not swamp them.[131] This measure was a great help towards the conservation of the Manuscripts permanently.

Covering the Tabu for preserving Manuscripts

131 Ibid.

(e) To read the Manuscripts by opening regularly and constantly :

A very effective measure of conserving Manuscripts permanently was to read the Manuscripts by opening regularly and constantly. The elders had the tradition of opening the Manuscripts regularly on auspicious days in order to them. Opening the Manuscripts regularly and constantly would help to drive out hostile enemy of Manuscripts like the silver-fish. Again, while opening the Manuscripts, one would have the chance to finding the leaves of the Manuscripts infected by fungus mould and mildew on the surface of the writing plate. This chance would help him to expose the affected leaves in the sun and cure them of the disease. Further, the opening of the Manuscripts would give the opportunity to clean dirt and dust. But the Manuscripts should not be opened for reading with wet hand in order to avoid acidic perspiration or oil accreations especially during summer months. The cotton gloves should be used in this case.[132] Therefore, the opening and reading the Puyas is a very effective means of conserving them permanently.

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132 V.P. Dwidevi : Museums And Museology : New Horizons, Delhi (1980), p. 192.

(f) To put leaves of medicinal plants between leaves of the Manuscripts :

Naturally, the medicinal ingredients of Manipur, there are many medicinal plants. The leaves of these medicinal plants were used to protect the Manuscripts from insects. As a matter of fact, there was a practice to insert leaves of egg-plant, Karpur, Urikshibi, Neem (melia genus), etc. between the leaves of each separate Manuscripts and also between separate Manuscripts. These leaves are very much disliked by insects. And, the smell of those plants is quite repellent to them.[133]

Hence, this measure of keeping herbal leaves among the leaves of the Manuscripts and between separate Manuscripts salvaged the books from destruction by the insects.

Our venerated forefathers had conserved and preserved the sacred Manuscripts written centuries ago, by using different technique of preservation in the indigenous way and then handed them down to the coming generation intact and in fine fettle. It is because of their dedicated devotion and selfless labour that the present generation has inherited the heritage of the sacred Puyas. Therefore, the present

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133 N. Indramani : Op. Cit.

generation also should endeavour to preserve this heritage by exploiting different advanced, scientific techniques for the future generation to come.

Fillings in the writing materials

Most of the Manipuri Manuscripts were found to have been written on the hand made papers with indegenously developed ink and pen made by them. As the Manipuris care for their Manuscripts to endure a bit longer time from the normal life of the writing materials, and to protect from damages due to insects and other animals, they started using preservatives and conservative materials in the preparation and making of the writing materials especially ink, hand made paper, and *Agarbak* or pieces of wooden plank sheets.

Preparation prior to forming of Manuscripts

The Manipuris had developed indigenous methods for conservation of the Manuscripts prior to their forming. The processes described earlier and the procedures of making hand made ink and paper are also a part of these measures. After making the paper into a broad sheet it is to be rubbed with the hard seed of Kangkhil (creeper

vine, family Zingiberaceae or Sciamineae) so as to level the face of the sheets. This rubbing with Kangkhil is to make the paper smooth for writing but would also stick the pigments of the ink properly on the surface of the paper. The broad sheet of the paper is to be cut with scissor into smaller pieces which would be the leaves of the Manuscripts. This is then a brief description of the processes of locally hand made paper.[134]

Process of conservation after writing

The process for indigenous conservation and preservation of Manuscripts in Manipur appeared to be of simple methodology. The processes are as follows:

1. Staining with flower juice

After the completion of writing a Manuscript, the writer who is generally the owner or custodian of the Manuscript, stains or smears the written page of the Manuscript with floral juice which is usually obtained from the petals of flowers. Sometimes, the young leaves or buds of certain shrubs or herbs were used for the purpose. The juice is not extracted or squeezed from the employing flower, leaf or bud,

[134] Personal interview with N. Gojen Singh, Haobam Marak Irom Leikai (Puya Costodian).

whereas, the flower itself is used as the staining or painting brush while rubbing on the surface of the sheet of paper with the application of a little pressure of the hand.

Flowers: The flowers normally used as preservatives for the Manuscripts are as follows:

i) *Sanarei* (Marigold, *Tagetes tenuifolia*, fam. compositae).

ii) *Hanggam-mapal* (mustard flower, *Brassica compotris*, fam. Cruciferae).

iii) *Javakusum* (China rose, *Hibicus rosasinensis*, fam. Maleaceae).

iv) *Aprajitaa* (*Clitoria terneta*, fam. Leguminosae).

v) *Aatar-gulap* (Rose, *Rosa indica*, fam. Rosaceae).

vi) *Utong-lei* (Tulip, *Thevetia pereviana*, fam. Apracynaceae).

Leaves and Buds: The leaves and buds of plants and shrubs normally used as preservatives for the Manuscripts are:

i) *Sanarei* (*Marigold, Tagetes tenuifolia*, fam. compositae).

ii) *Nongmangkha sana-machu* (*Phlongacanthus thyrsiflorus*, fam. Acanthaceae).

iii) *Heedak-manaa* (Tobacco, *Nicotiana tobaccum*, fam. Solanaceae).

iv) *Haaochak* (*Laggera flava*, fam. Compositae).

v) *Shagoidak-manaa angouba* (White trumpet flower, *Datura metal*, fam. Solanaceae).

vi) *Shagoidak amuba* (Black trumpet flower, *Datura fatusa*, fam. Solanaceae).

The staining of the floral juice appear to be the colouring motif for decoration on the pages of the Manuscripts, whereas, it is a measure taken up as protective, preservative and conservative practices. The medicinal properties in the organic state, such as Chlorophyll contained in the floral juice helps to ward off insects and other pests from cutting or biting the paper, thus preventing from spoiling the written characters. The elemental content of the floral juice

that sticks on the surface of the paper, not only helps ward off the insects and other pests but also protects from wear and tear.[135]

2. Rubbing with *Nungshil* (alum)

There were two types of *Nungshils* found in Manipur. These are the *Nungshil angouba* (white alum) and *Nungshil ashangba* (green alum or blue vitrol). The solid potash alum in dry state is rubbed softly to have adherence of its elemental particles on the surface of the paper. By so doing, it is said that this action helps in warding off insects, thereby discouraging them to lay eggs on the paper or to bite the paper.[136]

3. Carpentering of wooden shelves

After the completion of writing of the Manuscript, and consequently, smearing of the preservatives, local scholars normally do not keep the Manuscript in an open condition. As a next step the work of carpentering of shelves is done for storing of the Manuscripts. Wooden planks are usually used for making the shelves. The shelves are normally designed to hold the different sizes of the Manuscripts.

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135 Prof. Ratna Basu, Prof. Karunasindhu Das, Aspects of Manuscriptology (Kolkata-2005) : p. 166.

136 Ibid, p. 167.

Most of the shelves locally made are a bit broader and longer by about 1 to 2 cm around the Manuscript. Two pieces of wooden board are sawn and the surface is levelled. Out of these two pieces of wooden board, one is kept below the Manuscript so as to serve as the back cover, while the other is placed over the Manuscript so as to serve as the front cover of the Manuscript. As the surface of the wooden boards are smoothened with plane, the title of the Manuscript is usually written on the frontal or the outward side of the shelf which serves as the front cover of the Manuscript.[137]

5. Receptacle of Manuscripts

The receptacles of the old Manuscripts appear to have been used in different structure of baskets with or without covers, such as *Lubak* (square shaped horizontal shallow box basket), *Tabu* (cylindrical or rectangular horizontal form of basket), *Thop* (shallow cylindrical basket) or *Thoplang, Chengbon* (storage basket that is square shaped vertical structure with stands), and *Thummok* (storage basket). All the baskets, excepting the *Thummok*, have lids. The Manuscripts that are

[137] Ibid, p. 137.

stored in these receptacles are affected by atmospheric pressures, climatic phenomena and the effects of varying room temperature.

The Use of Protective/Conservative Materials

Traditionally, most of the Manuscripts were kept inside the house where all types of rodents, insects and fungus in damp areas were considered the most threatening elements for serious damages to the Manuscripts. To prevent damages to the Manuscripts such as by insect bites, the local custodians took up protective measures in their best knowledge. Much of the material used as preservatives were mostly derived from floral produces. The followings are a brief description of the floral types used as preservatives in the traditional way:

1. Leaves of *Hao-chak* plant (*Laggera flava*, fam. Compositae).

2. Leaves of *Nongmang-khaa* plant. (*Phlongacanthus thyrsiflorus*, fam. Acanthaceae).

3. Leaves of *Heedaak mana* (tobacco, *Nicotiana tobaccum*, fam. Solanaceae).

4. Leaves of *Ureekshibee* (*Vitex trifolia,* fam. Verbenaceae)

5. Stem of *Ok-heedaak* (*Acorus calamus,* fam. Aracea)

6. Leaves and buds of *Karpur-paambee* (*Blunea densiflora*, fam, Cruciferae).

It is believed that the use of camphor by extracting the substance from *Karpur* plant (*Blunea densiflora*) as protective material, commenced since the time of the Manipur King, Meidingu Chandrakirti (1850-1888 A.D.). Whereas, even as late as the reign of the king, Sir Churachand Singh (1891-1941 A.D.) in the early twentieth century, it is believed none in the nation state had the knowledge of using *Karpur akhaba* (Naphthalene). However, much later on, this material began to be used commonly by the people for protecting their clothes kept in cuboards against insect bites. The *Heedaak-manaa* (leaves of tobacco plant) was considered as an effective medium for repelling insects and flies.[138]

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138 Lm. (L) Ibungohal Singh and N. Khelchandra Singh : Op. Cit. p. 56.

6. Sunning of Manuscripts

The sunning of Manuscripts is another method used by the local scholars for the preservation and conservation of old documents. This was considered a necessary process for the dehumidification of the old Manuscripts by the Meitei scholars. The modern methods of preservative and conservative processes, however, prohibits the exposure of the old Manuscripts in sun light so as to protect the fragile documents from the injurious effects of ultraviolet radiation.

In the early days, the climatic conditions of the region was neither that much severe in temperature variation and weather conditions as being experienced today primarily due to extreme variations in minimum and maximum temperatures arising out of drastic climate change.In earlier times, most of the local or traditional houses had no adequate ventilation, and most of the receptacles of the Manuscripts were exposed to rodents, insects and infestation of microbes which locally is known as "*Kokphai shooja kaba*". The 'Kokphai', interpreted as mould, mildews, erysiphe, oidium, etc. and 'shooja' – mould, muco, panicillium, etc., cover up the surface of the pages of the Manuscripts within a short span of time, thus affecting the

valuable documents due to high humidity. In such situation, the local scholars or custodians of the Manuscripts were compelled to expose the Manuscripts in sunlight to dry off the organisms on the Manuscripts.[139]

The method traditionally applied by the local custodians for sunning of the Manuscripts was quite simple. The Manuscripts were taken out from their protective covers and were spread out on a *Phoura* (a large circular flat basket normally used for sunning paddy) or on a *Yangkok* (a circular flat basket used for winnowing rice) so as to exposed the documents to sunlight for treatment. The leaves of the Manuscripts were separately exposed for better sunning.

When there is a strong wind, it sometimes happen that the leaves of the Manuscripts that are being exposed to sunlight gets blown away and when they are gathered together they either gets misplaced or the sequence of the leaves are disturbed. The sunlight not only spoils the colour of the ink by reducing the elemental properties of the pigment, but also affects the papers on which the written things are displayed.

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139 B. Kulachandra Sharma : Op. Cit., p. 67.

Such exposure to the sun was considered more favourable in the month of August, and by this the worms are killed under the sun.

7. Warming of Manuscripts

By warming of Manuscripts, it means that the documents are exposed to heat energy. Such treatment reduces the elemental characteristics and properties of the documents to lead to the extinction of all the capacities and capabilities possessed by the documents in their elemental state. The warming of the Manuscripts was employed by the local scholars as a means of preservation and of the Manuscripts. For this purpose, the local custodians places the receptacles of the Manuscripts near the hearth or fireplace (‘phungga’ in the vernacular), or the containers of the Manuscripts are hung over the fireplace. This method was assumed by the local custodians would prevent the documents from infection by insects and other pests and would also refresh the Manuscripts by the heat received.[140]

From the above findings, it may be pointed out that the indigenous methods of preservation and conservation of the Manuscripts as prevailing in Manipur in the olden days were rather

[140] N. Harinarayana & Dr. V. Jeyaraj, Care of Museum objects, Chennai (1995), p. 44.

unsystematic and unscientific. Some of the plants and their products that had been known since ancient times for their germicidal properties and insect repellency potentialities, were put to use as conservative and preservative properties by the local scholars.

The indigenous practices for conservation and preservation of Manuscripts from other environmental factors as were used in Manipur were quite different from that of the indigenous practices in other parts of the country. Information on the indigenous techniques needs to be properly documented and, consequently, revived. There is a need to scientifically determine the best methods of preservation and conservation treatments so that the traditional methods may still retain their traditional values. In spite of the introduction of suitable chemicals for preservation of documents in the modern context, the traditional methods of preservation cannot be ignored. So, preservation of Manuscripts is a serious problem for the custodians of Manuscripts throughout the world. Comparative reviews with the rest of the country's resources on the indigenous methods of conservation and preservation of Manuscripts will help focus on the traditional practices in the State vis-a-vis the important role played by local scholars for the

long time preservation of the old Manuscripts which today form an important asset of the State's material heritage.

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CHAPTER-V

Conservation and Preservation Processes, and Preventive Measures

The old Manuscripts reveal the past history of a land or a kingdom, throwing light on the socio-cultural, socio-political, economic, and cultural lives of a people or a nation. The old Manuscripts, therefore, become concrete evidences of the past humanistic and artistic activities. The preservation and conservation of the Manuscripts is highly essential for an ethnic community or a race of people who possesses a language of their own and a script to write the language.

The Manuscripts found in Manipur are mostly in the material of writing on hand made papers. Alhough there are some Manuscripts written on *Agarbark*, *Kona mana* (palm-leaf), *Bhajapatra* (Birch bark), etc. the Manuscripts written on hand made paper are abundantly available. For the conservation and preservation of Manuscripts, one must have a fair knowledge of the basics of conservation and preservation of the materials on which the Manuscripts are written.

Preservation: This is in a sense the action required to make the material properties suchas the old Manuscripts accessible for as long as they are required for study and reference. Preservation includes conservation, which is defined as the actions required to prevent further deterioration of the original materials.

Universal Truth :

"Everything on this earth has a limited/defined life. Physical deterioration is a natural process and this can't be bypassed."[141]

[141] Tarun Ch. Saikia : Concept of Preservation, KKHL, MCC, G.U. (Booklet).

What is conservation

Any direct or indirect action on a damaged or undamaged Manuscript or the collection of Manuscripts aimed at enhancing the life of the Manuscripts can be termed as conservation.[142]

There are two types of Conservation :

(1) Preventive Conservation : Any action on a damaged or undamaged Manuscripts or collection of Manuscripts aimed at increasing the life expectancy of a Manuscripts can be termed as preventive conservation. For example : Regular inspection of the condition of the Manuscript.[143]

(2) Curative Conservation : Any action on a damaged Manuscript or collection of Manuscripts aimed at stopping active deterioration in the Manuscript and restoring it can be termed as curative conservation. For example : Fumigation of a Manuscript collection that has live insects in it.[144]

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142 National Mission for Manuscripts, New Delhi : Basic Minimum Standards for Conservation of Manuscripts (Booklet).

143 Ibid.

144 Ibid.

Restoration: Any direct action on a damaged Manuscript aimed at improving the visual aspects of the Manuscript can be termed as restoration. For example : Removing pencil marks from a Manuscript folio.[145]

From the above points, it is brought to focus that conservation is to enhance the life of the Manuscripts with effective methodology and techniques. Without having knowledge of the factors of deterioration, no effective process of conservation can be taken up. Therefore, there is a need to have basic information and knowledge on effective conservation.

History of Conservation

Manuscripts, though treated as literary works, may be placed in the category of art objects that are preserved in museums for exhibition as well as for dissemination of knowledge. The conservation of Manuscripts written on perishable materials appear to have been started much earlier than the art objects kept in museums. With growth in art conservation as a discipline, the art and science of conservation of Manuscripts are considered as an important subject to be taken up

145 Ibid.

by the Archives as the counterpart of museum in the context of Manuscripts. As the scientific reasonings rule over today's working realms, the traditional methods of conservation so long endured is reducing to the state of outdated systems.[146]

In India, indigenous communities had their own traditional approaches to the art of conservation, whereas, these were not based on the premise of the uniqueness of a work of art. If an art object becomes damaged, it could be repaired just like any other object. Sometimes, if it appeared to be beyond repair, it would quickly be knocked down and replaced by a new one made to look like the earlier object. An instance of this is the removal of Sudai or stucco figures of deities of the temple Gopuram and replacing them with newly made ones.[147]

The application of modern scientific methods of conservation of Manuscripts appear to have emerged by about the late 19th Century A.D.[148] The methods of the study and treatment of art objects were based on the principle of the least intervention in the material or structure of the art objects. In this regard, the first and foremost

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146 H. Harinarayana & Dr. V. Jayarai : Care of Museum objects (Chennai-2002), p. 1.
147 Ibid.
148 Ibid.

laboratory was opened in Germany. The British Museum on receiving the information, and hoping to have such a facility, asked Dr.Alexander Scott to prepare a report of what are to be done for the treatment of its art objects in the early twentieth century. Dr.Alexander gave three reports which became the basis of a Research Laboratory of the British Museum. The Laboratory was set up in 1921, but it became an integral part of the Museum with Dr. Alexander Scott as its head since 1931. He was succeeded by Dr. H.J.Plender Leith in 1938. The Archives and Libraries are presumed to have followed suit in setting up their own Research Laboratories for the restoration, preservation and conservation of the Manuscripts.[149]

With regard to the Indian approach of modern scientific conservation and treatment of museum and archival objects, the Archaeological Survey of India (ASI) set up a Laboratory in Dehradhun in the mid twenties. Different laboratories of various national and state institutions begun to spring up between 1951 to 1968

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149 Ibid, p. 2.

for the treatment of art objects. The National Museum located in New Delhi set up the second Indian Research Laboratory in 1951.[150]

With conservation laboratories springing up to meet the need for the conservation of art objects in Museums throughout the country, there was also a corresponding need for carrying out researches into different aspects of conservation, such as, suitable methods for analysis, methods of preservation of the composition of objects, methods of preservation and restoration suitable for the conditions in the country, preparation of indigenous materials of arts, etc. The result was the founding of the National Research Laboratory for Conservation at Lucknow in 1976 with Dr.O.P. Agarwal as its head.[151]

The National Archives of India too joined the movement for conservation of art objects during the 1960's and 1970's. The National Archives joined the conservation movement with its specialized interest in the preservation of records, Manuscripts and books. Today, there is a proliferation of laboratories in Museums and Archives in all of the States in India.[152]

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150 Ibid, p. 3.
151 Ibid, p. 4.
152 Ibid, p. 3.

At the same time, the professionals of conservation formed the Indian Association for the Study of Conservation of Cultural Property in 1968, and the National Museum of India took the lead role in the venture. The International Institute of Conservation (IIC) was established in 1950.[153]

The Process of Conservation and Preservation

Use of Oxygen free environment in Manuscript conservation :

The concept of displaying and storing art objects like Manuscripts in oxygen free environment has now been transformed into the techniques for preserving works of art as it is simple and can be modified accordingly to specific needs. The same technique is applied in preservation of our valuable Manuscript, "Constitution of India" in which the prototype got constructed by hiring in 1995 the services of Getty Conservation Institute, USA.[154]

As the processes of conservation are restoration and preservation, the process of restoration is to be taken up prior to the process of preservation. Restoration means the act or process of

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153 Ibid, p. 4.

154 B.V. Bharbade : (Seminar Proceeding) Emerging Innovations in Manuscript Conservation (January 23-24, 2008) p. 18.

restoring, that is, repairing, binding, putting or giving back, making good, reinstalling, bringing back to a former state or to a normal state, etc. So, after the collection of the Manuscript it is to be repaired which will be at the condition of an usable Manuscript which is readable to any one who is interested in the contents of the Manuscript. The value of restoration of a Manuscript is in the same preciousness are the preservation of the Manuscript.[155]

Most of the Manuscripts in public and private custody are of organic nature, and are prone to decay very fast. Some agents of deterioration of the Manuscripts can be described as follows:

1. Physical or environmental effective agents like light, heat and humidity.
2. Chemical agents such as acidity, gaseous and pollution.
3. Biological agent such as insects, mice, etc.
4. Microbiological agents such as fungi, algae, etc.
5. Accidental agents like flood, fire, etc.

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155 N. Harinarayana, Dr. V. Jeyaraj : Care of Museum Objects (Chennai-2002), p. 2.

6. Physical deterioration or improper management like rough handling, improper storage, etc.[156]

The Effect of Light

Light is an unseen source of deterioration of the Manuscripts or the works written on the perishable materials. The light of strong and short waves is harmful to the Manuscripts. It fades the works of writing and art. Even though less light means less fading, there must be sufficient light for the good viewing. The following actions are to be taken up to safeguard the Manuscripts against unnecessary exposure.

All rays are not harmful to the cellulose of the paper. Only far ultra-violet rays coming direct from the sun causes rupture of cellulose bond. However, the near ultra-violet rays causes direct destruction of cellulose and bleaches coloured paper. It also accelerates chemical degradation of paper which causes brittleness.[157]

1. Keep the delicate water colour documents with facing ink in storage.

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156 M.L. Nigam : Fundamentals of Museology, Hyderabad (1985), p. 72

157 National Archives of India, New Delhi (1993) : Conservation of Paper Materials, p. 7.

2. Display the Manuscripts in a room where sufficient natural light and air are available.

3. The time of exposure to light should be curtained.

4. A small bowl containing zinc oxide or titanium oxide, which absorbs nearly all the ultra violet rays, is to be kept in the storing receptacle of the Manuscripts.

Planning anti-light strategies

Paper documents are very sensitive to light. When exposed to light for long durations, paper becomes brittle. Damage to paper is caused by the visible rays as well as by ultra violet rays. The effects of light on material such as paper can be controlled by taking up the following measures:[158]

(a) Reduce the intensity of light falling upon the object.

(b) Expose the objects to the light only for a short period of time.

(c) Filter out photochemically active radiations like the ultra violet rays from the light.

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158 Ibid, p. 2.

The recommended level of light for paper paintings is 50 lux. Ultra violet radiations can be eliminated from the light by using an ultra-violet absorbent filter.

Effects of Environmental Humidity and Heat

Humidity beyond 70 percent allows the moulds (fungi) to grow and flourish. The growing of moulds causes paper to swell, and ink or pigment layers to peal off or develop micro-cracks. This is due to the different rates of expansion and contraction between the binding adhesive of the ink or pigments. Fluctuation of relative humidity and temperature causes rupture in the molecules of the paper.[159]

Heat is the agent of brittleness in Manuscripts, books, etc. Excess of heat beyond 30^0C causes to accelerate the processes of deterioration, discolouration, and the natural oil present in the palm leaf and birch-bark evaporates causing loss of flexibility. So, it is recommended that the relative humidity should be in the range of 55 percent to 60 percent, and the temperature should be between 20^0C to 24^0C. Chemicals like silica gel which has the property to absorb

[159] Ibid, p. 3.

moisture can be used where there is no advantage of air conditioning. Dehumidifying machines are prescribed at the rate of 2 to 3 Kilogram of the chemical, or a room of 20 to 25 cubic metre capacity to use during the days of moist climate and dampness.[160]

Circulation of air in the storing area of the Manuscripts is essential, as the circulation of air helps to eliminate pockets of stagnant air, which when coupled with excessive humidity, results in the growth of micro-organisms and other injurious pests.

Internal causes

Papers which are made from rags, clothes and long fibres hemp, etc. are more durable than those made from wood fibres or short fibres. Again, the process of pulping is also an important cause for the deterioration of papers, that is, the materials with which the Manuscripts are made. The earliest Manuscript papers are more durable than the papers of the modern Manuscripts or books, since the papers of early Manuscripts were made of chemical pulping method while modern ones are made of mechanical pulping method. The

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160 O. P. Agrawal and Mandana Barkeshli, Op. Cit. p. 44.

causes of deterioration, therefore, can be considerably checked during the first steps of manufacture of the paper.[161]

External causes

Acidity is one of the important factors for the deterioration of paper Manuscripts. Whereas, acidity may not have the same effect of deterioration on Manuscripts written on palm-leaf and birch-bark. Acidity in paper can be tested with blue litmus paper or $_{P}H$ paper. Paper becomes acidic from (i) the acid from polluted atmosphere, (ii) acid sizing like alum hardened, and (iii) acid pigments and inks especially in iron gall ink. Acidity renders loss of the strength of the papers by hydrolysis of the cellulose molecules. Hence, de-acidification is highly essential. There are different methods of de-acidification, such as:[162]

1) Aqueous method,

2) Non-aqueous method, and

3) Gaseous method.

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161 National Archives of India, New Delhi, Op. Cit., p. 3.
162 Ibid, p. 3.

Aqueous method

This method is popularly done with Barrow's de-acidification process. Three enameled trays containing calcium hydroxide (0.15 percent), fresh water and calcium bicarbonate solution (0.15 percent) are taken. Then the sheets of the document are immersed completely on the trays. Depending on the size and depth of the tray, 20 to 25 sheets of the Manuscripts can be immersed in one operation. After 20 minutes, the sheets are removed. The excess calcium hydroxide is drained and then the sheets are immersed in the fresh water for a two minutes. Then the sheets are again immersed in calcium bicarbonate mixture. The treated sheets are dried on white blotting papers.[163]

Non-aqueous method

This method is done with the David Baune-Cope de-acidification process. This method is useful when soluble ink or colours preclude immersing in water to wet the paper either by spraying or immersing with a solution of 1.9 percent crystalline barium hydroxide octahydrate in methyl alcohol (18.6 gms in 1 litre of

163 Ibid, p. 4.

methanol), followed by air drying, and keeping the de-acidification document on white blotting papers.[164]

Gaseous method

This method is taken up with treatment of dilute ammonia (1:10) to the Manuscript or documents in a fumigation chamber. Again, if there is suspicious of solubility of the ink with the contact of water, this process of treatment of the fume of dilute ammonia appears to be the best means. Dilute ammonia is placed on the bottom of the chamber and the Manuscript is kept above it for exposure to the ammonia fume for around 4 to 5 hours. After this, the Manuscript folios are again exposed to fresh air for about 10 to 12 hours to dispel the excess ammonia. Care has to be taken while testing the effect of ammonia on the used ink.[165]

Biological and Microbiological causes

The agents of biological and microbiological causes for deterioration of Manuscripts are termed as Biodeteriorating Agents. These have much effects on the organic materials such as paper and

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164 O.P. Agarwal : Care & Preservation of Museum Objects; New Delhi, N.R.L.C. (1977), Pp. 25-26.

165 Ibid, p. 160.

palm leaf but these cannot damage or make their effect on birch-bark. Some of the biological and microbiological causes are:

a) Fungi

Amongst the fungi, the moulds or mildews are the most effective agents of deterioration of the Manuscripts. They damage by hydrolyzing the cellulose molecules. The effect makes the paper acidic and weak. Fungi that produce foxing (that is, the rusty brown stain on paper) in course of their metabolic processes secrete organic acids which react with the traces of iron present in the papers and form salt. These salts finally undergo decomposition to form oxides and hydroxides of iron which ultimately produce, in presence of moisture, characteristic rusty brown stains known as foxing.[166]

The mould is controlled permanently only when the temperature of the storing room of the Manuscripts is kept between 22°C to 24°C. 5 percent thymol in methyl alcohol should be sprayed to the fungus affected areas with the help of hand sprayer. If this is not possible, the said spraying papers are to be fumigated with thymol in

[166] Swarnakamal – Protection & Conservation of Museum Collection, Museum & Picture Gallery Baroda (1975), p. 146.

the thymol fumigation chamber, with the dose of 1 oz. or 16 cubic feet space and with a duration of 12 to 14 days.[167] A 40 watt bulb is to be lighted to melt and evaporate the thymol in the fumigation chamber.

b) Insects

Damage done to paper Manuscripts by insects is often considerable and irreparable. They are in the forefront amongst the enemies of Manuscripts.[168] The following insects spoil the Manuscripts, shelves and receptacles. These are:

i) Cockroaches

Cockroaches are placed under the order Orthoptera. These insects are extremely Ominvorous. They live in dark, warm, humid places and cause damage to paper & book bindings.[169] Cockroaches hide themselves during daytime and emerge at night-time to look for food. They eat and cut away not only the leaves of the Manuscripts, but also the wrapping clothes. Their exreta, which is black in colour,

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167 Ibid, p. 170.
168 Swarnakamal : Op. Cit., p. 143.
169 Ibid, p. 56.

also gets desposited on the books and Manuscripts and discolours them, thus changing their appearance.[170]

ii) Silver Fishes

Silver Fishes are placed under subclass Apterygota and order Thysanura and family Lepismidae and are found throughout India. They are normally white or grey in colour. They too, are active at night similarly as cockroaches. They favour damp, cool atmosphere and eat the leaves of the Manuscripts. Silverfishes lay their eggs in dark spaces behind the Manuscripts kept in the shelves. The surface of the Manuscripts is commonly eatern by these insects. Their growth and development are favourable in places where the temperature varies between 60°-80°F & the humidity is greater than 55%.[171]

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170 Agrawal and Mandana Barkeshli : Op. Cit., p. 39.
171 Ibid, Pp. 56-57.

iii) Termites or white ants

Termite
Scientific name : *Termitoidae*

Termites are placed under the order Isoptera. They always avoid light & are therefore classified as Lucifugous species.[172] There are several varieties of termites, of which earth dwelling and wool habituating forms are well known. Termites attack from the bottom of the receptacle of the Manuscripts, wooden cases and wrapping clothes. They eat these on their way to find the inner portion of the Manuscripts. Then they eat away the cellulose matters of the writing sheets. If the Manuscripts get infested by termites, they can be destroyed and damaged in no time. They move from one place to the other through earthen channels which they construct on the walls which are often sure indication of the presence of termites.[173]

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172 Ibid, p. 58.
173 Ibid, p. 41.

iv) Book-lice

These insects are placed under the order Corrodentia & Family Liposcelidae & are slender bodied, size being nearly 1mm long. Mouth parts are of biting & chewing type. A striking feature of this insect is that it breeds throughout the years. They favour to live in dark and damp places. They damage the paper, palm-leaf, etc. by eating up the glue and starch. They destroy book-binding, therefore, they have received the name book-lice.[174]

v) Book worms

There are 160 species of book worms. The adult beetles and their larvae are generally lined in the dark places. The beetles lay their eggs on the edge of the sheets of the Manuscripts. When the eggs hatch, the larvae eat the book and produce sort of channels inside the entire Manuscript or book.[175]

vi) Moths

These insects are placed under the order Lepidoptera & family Tineidae which includes various species of cloth-moths. The larvae of

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174 Ibid, p. 57.
175 Ibid, P. 41.

moth are also one of the agents of deterioration of the Manuscripts. They are white, hairless, dark headed as about half an inch long in size.They eat clothes and leather book cover.[176]

vii) Mudwaps and bed bugs

Mudwaps and bed bugs do not damage the interior of the books but cause stains on the cover of the Manuscripts or on the shelves.

viii) Rodents

Rodents include mice, rats, rabbits, squirrels, etc. A female brown rat gives birth to about 50 offsprings in a year and they eat anything made of paper, glue, etc.[177] Like other insects, it also damages records, books and Manuscripts in search of food. The important characteristics of this animal is that it sharpens the attack as an act of vengeance after smelling anything about barricading its normal activities. It is a proved fact and story.[178] The mice are also dangerous to paper. Like other insects and animals, rodents also are attracted by the food items. Therefore, no edibles should be allowed in the repository. The first and foremost measure towards planning

176 National Archives of India (1995) : Op. Cit., p. 10.
177 Ibid, p. 10.
178 National Archives of India, New Delhi (2004-2005), Archival Study, p. 104.

against rodents is to block all the possible entry points including outlets in the Archives building. Pipes and windows should be covered with metal gauges. Besides these, baits and poisons like zinc phosphide, arsenic oxide, etc. with materials may be used effectively.

Protection

For protection aganist insects, periodic inspection of the Manuscripts is of utmost importance. If any infection is found, action must be taken up at once.

If book worms damage the Manuscripts or other important documents, fumigation with paradichlorobenzene, which is an insecticide, in a closed chamber for 21 days should be taken up. The dose prescribed is 5 kg in 1000 cubic feet space. Affected leaves should be set on the perforated shelves in an inverted V-shaped, and P.D.B. shall also be kept at the top of the chamber.

Cockroaches, silverfish, termites, book-lice, moths, mudwasps and bed bugs can be expelled by P.I.P. insecticide (it should be liquid and readymade). This insecticide is pyrethrum base and it can be sprayed

by "Euroclean" mono vacuum cleaner or by Fumex in large scale in the storage area of the Manuscripts at least once in a month.[179]

The bricks of naphthalene (at least 5 gms in weight each) should be kept on each shelve of the box, almirah, receptacle, etc. The naphthalene will act as the insect repellent.

The damages caused by rats or mice can be controlled effectively by food poisoning and trapping. Poisons are also used with baits which are sprayed at places where the rats or mice frequent. Some of the poison for the rats or mice are Zinc phosphide (3% to 5%), Arsenic oxide (10% to 15%), Sodium carbonate (10% to 15%), etc. The best way for using baits is to set in the trap[180].

Accidental causes

Accidental causes are mostly the natural calamities which deteriorate paper, documents or Manuscripts. The calamities may be enumerated as flood, rain, splashing into the building, leakage of roof, bursting of drainage piping, fire, etc. Fire is the greatest accidental

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179 Op. Cit., O.P. Agarwal, Pp. 33-41.
180 R.S. Singh, Ph.D. (Museology) New Delhi (Booklet) (1993), p. 103.

agent which damages the buildings where the Manuscripts are stored, such as Archives, Museum, Libraries, private buildings, etc.

Prevention

Prevention from accidental agents of deterioration of the Manuscripts or paper material is quite important. With regards to floods and other agents related to water and humidity, the Manuscripts should be moved to the drier surroundings where the humidity can be controlled.

Drying of the wet folios of the Manuscripts should be taken up along with fungicidal treatment as there would be possibilities of germination of fungi during the process. Drying should be accomplished as fast as is possible in order to minimize the mould problem, and to prevent the migration of water soluble constituents.[181]

A solution of 10 percent thymol by weight in methanol for impregnating the leaves of paper should be sprayed as disinfecting sheets by being interleaved between pages of the water soaked Manuscripts. The sheets should be spread on white blotting paper in a well ventilated room to dry in the natural way. The temperature of the

[181] Ibid, Pp. 172-73.

room in which the treatment of drying is taken up should be set between 30°C to 40°C. After drying the sheets, these are to be fumigated and repaired before storage to its receptacle. If mud, dust or dirt are deposited or filled on the sheets of paper or folios of the Manuscripts, these can be removed by slight scrapping or slender washing in warm water ranging between 35°C to 40°C.

For large quantity of water soaked on wet paper, the process of freezing or vacuum drying is considered as the most suitable method. Recently, researchers using microwave energy, dielectric energy or by solvent extraction with or without vacuum assistance, conducted experiments on the method of rapid drying of the paper documents.[182]

Fire is one of the greatest dangers to Archives, Libraries and other institutions. Inflammable products such as paint, varnish, polish, oils, organic solvents and cleaning fluids should be stored outside the room where the Manuscripts are kept. One of the first and foremost activities to be taken up for prevention is the complete prohibition of smoking practices inside the library and archives building. Secondly, a special wiring system should be adopted. Extinguishers are required to

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[182] Ibid, P. 173.

be kept in easy access places. Extinguishers of the type of dry chemical or carbon-dioxide are the best choices where the organic materials such as paper, clothes, etc. are stored. The significance of all the detection systems is that they raise alarm first after the outbreak of fire & the indicator panel of the system shows the location of the place where fire has broken.[183]

Completely burnt papers are fertiled, while charred or partially charred papers are kept separately for treatment.[184] Each sheet is put in a separate folder keeping in mind their brittleness.

Rough handling and Improper storage

Constant handling and use in an improper manner of storage of the Manuscripts damage the folios of the Manuscripts. The fragile documents are to handl with care at all times.

Curative measures

Curative measures taken up for torn, brittle, fragile and damaged folios of Manuscripts are mended or repaired, and are further laminated for lenthened life-span. A few curative measures are given as follows:

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183 National Archives of India : Op. Cit., p. 144.
184 H. Harinarayana & Dr. V. Jayarai : Op. Cit., Ibid, p. 173.

1) Mending or Repair

The method of repair adopted by almost all the governmental and non-governmental institutions in India is motto and motive of mending introduced by the Asiatic Society, Kolkata. The method consists of the acts of full pasting, tissue repair, and chiffon repair. These are:

a) Full Pasting

Manuscripts written on only one side of the folio which becomes brittle due to fire may be strengthened by pasting hand made paper at the back. To achieve this, the size of the paper to be used in full pasting should be made slightly larger than the size of the original document to be pasted. After drying the full pasting, the over size hand made paper is to be trimmed with scissor to the size of the actual document, keeping a margin of 2 to 3cm to safeguard the edges of the document when it is in use.[185]

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185 O.P. Agrawal & Mandana Barkeshli : Op. Cit., P. 203.

b) Tissue Repair

Torn sheet of the Manuscripts, the writings on which had not faded and which show only slight deterioration, can be reinforced or repaired with the lense tissue paper by using C.M.C. paste.

c) Chiffon Repair

"Chiffon" is a trade name which denotes the fine transparent gauze of silk. It is used for repairing extremely fragile ink corrode and insect damaged folios of the Manuscripts. However, this must be carefully employed so as to remove all the slips and patch pasting of the pages of the written sheet prior to undertaking of the chiffon repair. The treatment of the chiffon repair is done in the following manner.[186]

After removal of the paste, the document which is ready on a waxed paper is covered with a chiffon or silk piece slightly larger than the Manuscript. CMC paste is applied to the chiffon piece with a brush, starting from the centre and gradually spreading outwards. When the entire Manuscript has been covered and treated with the paste, the assembly is turned over on another waxed paper. The first waxed paper which will be now on the top is carefully removed so that the

[186] H. Harinarayana & Dr. V. Jeyarai : Op. Cit., Pp. 174-75.

document remains intact on the second waxed paper. The process of pasting of chiffon piece is now repeated on the top side. After the chiffon has been fixed on both the sides of the Manuscript, care is taken to avoid creasing of the fabric, and the sandwiched Manuscript is allowed to dry. The oversize chiffon is then trimmed, keeping a margin of 2 to 3cm.[187]

Lamination

Lamination is the act of beating or rolling into thin plates or overlaying with plastic layer, etc. Hence, lamination offers numerous advantages over the other types of repair of the Manuscripts or important documents. The process of lamination should be applied after the de-acidification of the Manuscripts.[188]

Machine Lamination

The process of machine lamination involves hot-sealing a de-acidified document with cellulose acetate film of 23 micron in

187 O.P. Agrawal and Mandana Barkeshli : Op. Cit., p. 219.
188 Ibid, p. 198.

thickness and tissue paper by impregnor laminating machine. In machine lamination, a special laminator is required.[189]

Solvent lamination

The process of solvent lamination requires relatively expensive equipment. The use of manual process of lamination in which an organic solvent Acetone is used to soften the plastic film, is generally employed or taken up. The process is described as the folio of the Manuscript is prepared in a feuply sandwich with cellulose acetate film and tissue paper. Using a cotton swab, acetone is applied to the centre of the surface of the sandwich and wiped towards the edge. The procedure is repeated on the other side of the sandwich, and the laminate is then pressed in an ordinary binder's press. All types of paper, irrespective of their thickness, may be repaired by this process.

Certain precautions are to be kept in mind when the documents are being repaired by this process. It is important to take up the following precautionary measures, namely, (a) no smoking in the room or no naked flame in the room should be allowed, and (b) there must be proper circulation of air for the removal of the acetone fumes in the

189 Ibid, p. 222

room by means of exhaust fans. This would prevent health hazards to the workers when the preventive processes are in progress.[190]

Encapsulation

For the protection and safeguard of the folios of the Manuscripts that are written on both sides of the leaf, the process of encapsulation is taken up. This action is to enclose the leaf of the Manuscript in capsule. The process of encapsulation is described as follows.[191]

A non-plasticized polyester or polypropelene film is used for encapsulation. Encapsulation differs from other more traditional forms of support such as lamination. It is simply held in position, trapped between two surfaces which form a physical barrier against potentially harmful external forces. The polyester barrier is very tough, and an effective protection against rough handling and abrasion. It is impervious to water but allow slow transmission of vapour. All edges can be completely sealed and tiny gaps can be left at the corners to allow an increased exchange of air.

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190 Ibid, Pp. 225-228.
191 H. Harinarayana & Dr. V. Jeyarai : Op. Cit., p. 177.

After systematic scientific research with regards to the encapsulation, it had been proven that there is no need for keeping tiny gaps of the encapsuled documents to avoid the atmospheric pollution, dust, insects, etc. The advantages of encapsulation are :

1) It gives excellent support and protection with minimum interference to the original item.

2) There is no visual difference between the print and the encapsuled print document.

3) Encapsulation is instantly and fully reversible without damaging the document.

4) The integrity of an item is preserved.

5) Encapsulation gives protection from water.

6) Polyester/Polypropelene films on different thickness are easily available in the market, and are cheaper than imported tissue paper and cellulose acetate film.

7) Polyester/polypropelene films are very strong, clear, neutral and resistant to wrinkling.

8) Cost of encapsulation with polyester/polypropelene films of 1 square meter size is not likely to exceed Rs.10/- which is cheaper than the lamination with cellulose acetate film and tissue paper.

9) Polyester/polypropelene film has no nutrient value and, therefore, are not attacked by insects and fungi. It is impervious to air and water and, therefore, protects the encapsuled paper from the deleterious effects of atmospheric pollution.[192]

Covering with shelves

Manuscripts and their folios that are kept in loosened sheet or not properly bound require two wooden hardboard covers for protection of the Manuscripts. The shelves are made according to the size of the respective Manuscript.

Wrapping clothes

The Manuscripts in the custody of the local scholars are traditionally wrapped with a piece of cloth which is normally of red

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192 Ibid, P. 177-78.

colour, locally called as ‘phirangi phi’. Such wrapping clothes are made according to the size of the individual Manuscripts.

Specification of Repairing Material

Some specifications of repair material for scientific conservation and preservation of Manuscripts are as follows:

a) **Hand made Paper**

In India, hand-made papers are still manufactured by various cottage industries. Hand-made tissue paper, normally produced has been found to be quite good for lining as well as for patching lost portions. Normally, these papers are non-acidic.[193]

b) **Tissue Paper**

A very good archival quality tissue paper of GSM has been developed recently by the Kumarappa National Handmade Paper Institute, Jaipur, (India). It has Alpha Cellulose percentage of about 89 and lignin only 0.28. There is no sizing material added to the pulp. A buffer is added to take care of future acidity. Tests at INTACH Indian Conservation Institute and Research Laboratory for Conservation of

[193] O.P. Agrawal & Mandana Barkeshli : Op. Cit., p. 292.

Cultural Property, Lucknow indicate that it is an excellent paper for conservation.[194]

c) **Chiffon**

Chiffon used in repair shall be of fine, pure and white silk gauze, having a mesh count of 33x32 per sq.cm. (i.e., 83×82 per sq. inch). It shall have a thickness of 0.085 mm (average) and a $_{P}^{H}$ of 6.0-6.5.

d) **Long Cloth**

Long cloth used for mounting maps and charts of heavy weight shall be of fine bleached quality, having average thickness of 0.1 mm and mesh count of 35×28 (approximately) per sq.cm. It shall be of even weave free from knots in threads and shall not contain sizing materials.

e) **Cellulose Acetate Foil**

Sometimes, paper documents which are written on both sides and are in a bad state may be repaired by laminating between two sheets of a synthetic film. The film most used for lamination is

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194 Ibid. p. 217.

cellulose acetate film of 23 micron thickness and Japanese tissue paper of 9 GSM. The film is fixed to the document with heat applied in a laminating machine or by acetone lamination.[195] The cellulose acetate foil recommendation for lamination should have a thickness of 0.0223 mm and should be flexible, semi-moisture proof and should not change in colour and flexibility when subjected to accelerated ageing at $103^0 \pm 2^0$C for 72 hours. It should be free from nitrate and should have a stable plasticizer.

Formulae and Preparation of Dextrine and Starch Pastes

i) **Dextrine Paste**

Dextrine is produced by the decomposition of starch with acid. It is formed when high starch moistened with acids is heated. When water is added to destrine and stirred, a thick solution is produced and can be used as an adhesive for paper.

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195 Ibid, p. 222.

Preparation Procedure :

Materials

Dextrine	250 gms.
Water	500 gms.
Oil of Clove	4 gms.
Saffron	4 gms.
Barium Carbonate	8 gms.

Water is taken in a brass vessel and heated to about 90°C. Dextrine powder is slowly added to the hot water stirring it all the time to avoid formation of lumps and mixed properly. Barium Carbonate is added to paste, while it is still on fire. Oil of cloves and saffron are also added slowly and mixed with the paste when cooled. It is then passed through a piece of muslin cloth.[196]

ii) **Starch Paste**

Starch is available in nature in various plants. It is prepared mainly from rice, some cereals & potatoes, and is produced by

[196] Ibid, P. 296.

grinding the seeds or roots, etc. and washing in water. In that form, it is a carbohydrate consisting only of carbon, hydrogen and oxygen. Starch to be used for restoration should be free of protein. Starch pastes are more stable than the flour paste which contains glutin that degrades faster. Wheat starch is the best and most stable. The formula for the preparation of starch paste is as follows :

Starch	1 part.
Water	5 part.
Insecticide	2% of starch.
Glycerine	1.2% of starch.

Glycerine is added to maintain the flexibility of the Manuscript after drying.[197]

Procedure of preparing starch paste :

A small quantity of starch is mixed with water and stirred vigorously, ensuring that lumps of starch are not formed at the bottom of the vessel. It is placed on slow fire and cooked till it starts to froth. While cookig the paste, it should be continuously stirred to avoid

[197] Ibid, Pp. 294-295.

formation of lumps and charring of starch. When it is well-cooked, glycerine is mixed to it at this stage and the paste well stirred so that glycerine completely dissolves in it. It is allowed to cool and then the insecticide is added and mixed thoroughly. It is strained through a piece of muslin cloth so that the skin formed on the surface of the paste or any nodules which might have crept in are removed. According to need it can be used.[198]

iii) **New Synthetic Adhesive for Repair of Documents, with Tissue Paper and Chiffon, Sodium Salt of Carboxymethyl Cellulose.**

CMC Paste : Sodium salt of CMC has also been used for repair of Manuscripts. Its solution in water is thick and on standing its gel is formed. The gel has an adhesive quality depending on the molecular weight of CMC. It is hygroscopic in nature and absorbs humidity from the atmosphere.

Method of Preparation :

Generally, a 2.5% of CMC dissolved in water gives a good paste. To prepare it, the required quantity of water is heated to 80°C and CMC is added to it and stirring till all the chemical has been

198 Ibid, Pp. 294, 295.

mixed. The solution is allowed to stand for about 3 hrs. when a homogenous gel is obtained.[199]

To prepare the paste, a measured quantity of water is heated in a range of 80 to 90°C. The heating is discontinued and sodium salt of carboxymethyl cellulose is added in small quantities with gradual stirring till a concentration of 2.5 to 3 percent (by weight) of the chemical is obtained in the solution.

iv) **Leather Preservation Mixture**

1. Lenol inanhydrous	800 gm.
2. Bee-wax	15 gm.
3. Cedar-wood oil	30 ml.
4. Benzene	350 ml.

Repairing Equipment Required in a Record Office

1. Repairing table, preferably with glass top.
2. Small hand press.
3. Paper trimmer.

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[199] Ibid, Pp. 296, 297.

4. Scissors.

5. Knives.

6. Paring knives.

7. Cups (enamelled or brass).

8. Dishes (enamelled or brass).

9. Brushes (camel hair, 2.5-1.25 cm. wide).

10. Paper cutting slices (preferably made of horn).

11. Foot-rule.

12. Sewing needles (big and small).

13. Bodking (for piercing holes).

14. Enamelled trays.

15. Glass plates.

16. Degchi for preparing dextrine, maida and C.M.C. pastes.

17. Electric plates.

Fumigation of Manuscripts :

Fumigation is a process used for destroying the insects, worm, moths or the like species by making use of suitable chemicals which volatilize and produce insecticidal fumes.[200] Fumigation is required only when paper is affected for there are chances of infestations by insects and fungus. This is a very quick and safe method for preventing and controlling of insects and fungus attacks on cellulosic materials.

Fumigation Chamber

Treating the Manuscript in the Fumigation Chamber

Fumigation involves the introduction of a pesticidal gas into a enclosed space. The pesticidal gas kills the insects. If paper is affected

200 T.R. Gairo : Chemical Conservation of Museum Obsects, Baroda (1959), p. 5.

by fungus, to kill the fungal spores, use of fumigation chamber is very much required. For fumigation against fungus, thymol vapour is the most common and effective practice. For fumigation against insects, paradichlorobenzne is the most effective practice.[201] Paradichlorobenzene are heavier than air, so that placement of this chemical should always be kept on the top shelf of the chamber.

Pagination/Numbering :

If the document/Manuscript has a single sheet, there is no difficulty of numbering. On the other hand, if it is a Manuscript having several leaves, whether in a loose form or in a bound form, numbering of the leaves should be invariably checked. It should be examined whether all the leaves are present or some of the pages are missing. Renumbering may be done in the centre or in the right hand corner of the bottom of each leaf. Renumbering is done with a soft pencil so that it can be erased if necessary.[202]

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201 Swarnakamal : Op. Cit., p. 152.
202 Agarwal O.P. & Parkeshli Mandana : Op. Cit., Pp. 101-102.

Cleaning of Paper Manuscripts :

Dirt can be a point source of deterioration on a paper object. Cleaning is a necessary treatment preliminary to any future treatment of a paper Manuscript also while preparing the paper surface before giving it a protective coating or joining pieces of papers during restoration.[203]

Dry Brushing : Dust does not cohere to itself neither adhere very strongly to the object. It can therefore easily be removed with a soft brush or a feather duster.[204]

Cleaning of Manuscript with soft brush

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203 Mrs. Mallika Mitra : Op. Cit., (Seminar Paper)
204 Ibid, (Seminar Paper)

Aqueous Cleaning : The paper having an insoluble or printed matter can be cleaned with water as a medium. But before using water for cleaning a paper, thorough testing of the solubility of the ink and the colour carried by the paper should be carried out. Sometimes a mixture of water and ethyl alcohol is used for aqueous cleaning for the easy penetrating of the solvent into the paper.[205]

Litmus Paper : It contains a specific type of dye which is sensitive to acid. A strip a litmus paper is red in an acidic solution and blue in a basic solution.[206]

Checking acidity of the Manuscript with blue litmus paper

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205 Ibid. (Seminar Paper).
206 Ibid, (Seminar Paper).

Removal of the Stains :

After dry and wet cleaning, the fungal stains were revealed as black or brown patches at some area on the document surface. The stains which required to be removed with hydrogen peroxide and ether in equal volumes. 1% hydrogen peroxide with water can apply with the help of tissue paper on stains, until the stains were reduced.[207]

Removal of stain

Washing :

Washing with distilled water will remove some of the acids such as sulphuric acid and oxidised products of cellulose which are soluble in water. Prior to washing with water, ink must be tested for solubility by placing a small drop of water over the writing and blotting with a

[207] Ibid, (Seminar Paper).

strip. If the ink is soluble, a part of it is will be transferred to the blotting strip. Washing, and consequently de-acidification, may be most successful if the paper can be made thoroughly wet and water can penetrate deep inside the paper fibres. Penetration of water can be achieved better by giving bath in a mixture of an alcohol, like ethyl alcohol as isopropyl alcohol and water in a ratio of 1:1, and then only with water. The paper is first of all made wet in this mixture and then placed in a bath of plain water. However, before immersing the paper in the alcohol mixture, the solubility if ink, dye, pigment etc. is tested with the solvents.[208]

Restoration and Repair :

After cleaning, washing and de-acidification, Manuscripts require some restoration and repair work which may consist of following resizing, minor or major repair to impart strength to the document. Those documents which have become extremely brittle may need major repairs.[209]

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208 Ibid, p. 149 (6.4)
209 Ibid, p. 177.

Steps of Repair.

There are various steps of restoration and are enumerated below:[210]

(i) Flattening

(ii) Resizing

(iii) Minor repairs

(iv) Reinforcement of paper

Flattening : In this process, any folds, wrinkles or distortions in the documents are removed, before undertaking any repair work. Very often, wrinkles and folds are formed in paper documents. There is always a tendency for the paper to break due to force applied during handling. If the fold is removed beforehand the eventuality of this break may be avoided. Quite often, if a document is flattened, it may not require any major repair.[211]

Resizing : Sometimes on account of the action of water or fungi, paper becomes weak due to the decay of the sizing material. Paper becomes

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210 Ibid, p. 178.

211 Ibid, p. 178.

limp and loses its crispness. When the sizing of the paper is lost, it gets easily stained and is further damaged. Resizing is necessary after the document has been cleaned. Washed or de-acidification, a process in which sizing materials is also lost. Before sizing is carried out, the ink of the Manuscript must be tested with water. Any ink which bleeds with water, has to be protected by the application of a solution of 3% polyvinyl acetate in sulphur-free toluene or a solution of cellulose film is acetone. Such documents have to sized very carefully and with great care.[212]

Minor Repairs : Some documents which are only slightly damaged may need only minor repair. For instance sometimes there may be a small tear or a corners missing or small holes in the sheet for example insect holes or some missing parts which can be easily repaired without requiring stored readily by minor repairs there are several methods is used for instance with impregnated tissue paper or with paper pulp.[213]

(a) Mending of tears : For mending of tears, the normal procedure is to paste a small strip of tissue from both sides of the tear. In one

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212 Ibid, Pp. 181, 183.
213 Ibid, p. 187.

method, a strip of a size slightly bigger than the fear is separated from a tissue paper with the help of a water-lines. The document to be repaired is put over a polythene sheet. A polyester film-piece is place on the torn portion and a tissue paper strip is placed over it. A line of water is marked on the tissue paper of a size bigger than the tear. The strip is separated from the tissue paper, placed over a polyester film and a paste is applied on it with a brush. It is then brought over the tear along with the covering polyester. It is well pressed with a spatula and left to dry.[214]

(b) Mending of corners : For mending of torn corners of a page, the steps are as follows

(i) Cut out a piece of handmade paper of a similar thickness as the original.

(ii) Slightly reduce the thickness of the document as well as of the repair paper at the edges to be joined.

(iii) Apply a thin paste on the edge of the document.

(iv) Place the repair paper in position and press.[215]

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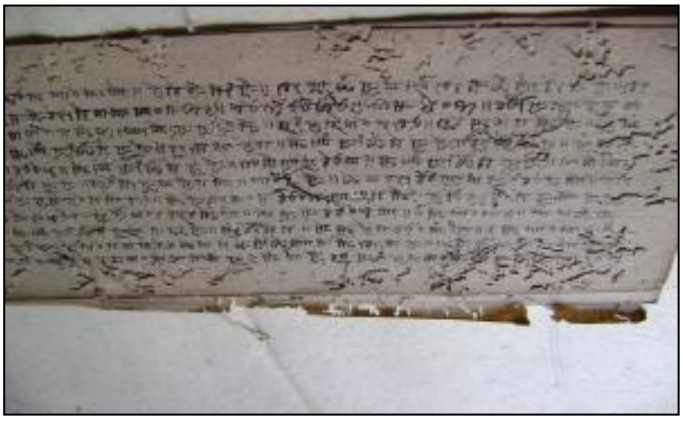
214 Ibid, p. 187.
215 Ibid, P. 190.

(c) Filling of holes : The small holes in a document are filled with paper fibres. The paper for preparing the fibre suspension is selected carefully, so that it matches with that of the original. For this operation of filling the holes, a light-table in which light is passed through the frosted glass is useful. A small strip of tissue paper is placed on a glass sheet, made wet and a drop of paste is also applied on that spot. The paper fibres are separated with the help of a scalpel from the strips and mixed with the paste on the glass and few fibres are taken out with a tweezer and filled inside the hole. More fibres are filled in till it reaches slightly above the level of the document. The volume of the filled fibres decrease on drying. Then it is semi-dried, the filled in hole is smoothened from both the sides with a spatula and allowed to dry. In the same manner, other holes in the document are also filled in.[216]



Sample of Manuscript attacked by insect

[216] Ibid, p. 192.

Sample of Manuscripts attacked by Silverfish

Carboxy Methyl Cellulose (CMC) Solution

Taking out fibres from the wet (with CMC solution) tissue paper

Filling the holes with Japanese tissue paper and CMC Solution

(d) Reinforcement of weak paper : A document which has become brittle or fragile due to different causes is to be reinforced

physically so that it is strengthened for study, storage or display. In such a case, minor repairs will not suffice.[217]

Reinforcement by full lining :

These document which have writing only one side of the paper and the other side is blank can be reinforced by lining a tissue paper from the back using a past. A good tissue paper is used for this purpose. Napalese tissue paper or Japanese tissue paper have been found of great use for lining.

The following are the various steps for full pasting.

(i) Cut a sheet of lining paper of a size 25 cms larges on all the four sides than the document.

(ii) Apply evenly a very dilute and thin layer of started on a acrylic sheet.

(iii) Spread a white ‘terylene’ cloth on the acrylic sheet on which paste has been applied.

(iv) Remove all the creases from the terylene.

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217 Ibid, p. 192.

(v) Apply a thin paste, in a marked area of the same dimensions as the tissue paper cut in step (i) on terylene.

(vi) Spread the sheet tissue paper over the pasted area.

(vii) Moistened it with a flat brush or sponge dipped in water in such a manner that all the creases of the paper are removed.

(viii) Place the document with written side over a polythene sheet and moisten it slightly. Remove its crease.

(ix) Place the document with written side downwards over a sheet of polythene or silicon paper.

(x) Moisten it slightly to relax it.

(xi) Lift the polythene sheet along with the document and invert it, so that the document is on the lower side of the polythene.

(xii) Place it over the pasted terylene cloth in such a manner that the document is over the pasted area.

(xiii) Apply light pressure with a cotton pad.

(xiv) Remove the polythene sheet to expose the document.

(xv) It is allowed to dry by placing the sheet over the drying cabinet.

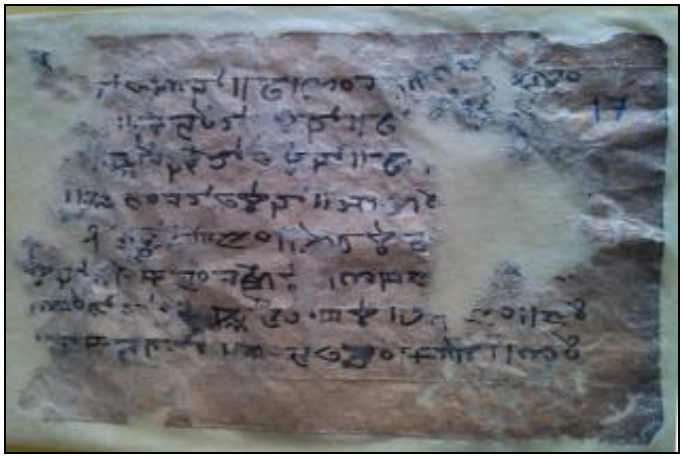
(xvi) When it is dry the terylene cloth along with the document is peeled off the acrylic sheet.

(xvii) It is placed on a table, with the document side below, and gradually removed from the document.

(xviii) The edges of the tissue paper on which the document is pasted are trimmed to the required size.[218]

Lamination of Manuscript with Japanese tissue paper and CMC

[218] Ibid. Pp. 203-208.



Manuscript after lamination

Manuscripts kept in the acid free box after lamination

The old Manuscripts written in archaic and ancient or classic dialects are the most valuable property of a nation or of a particular community. These are ancient treasures handed down through the generations as inherited wealth of a family's or a community's ancestors. It is because of the fact that such Manuscripts provide valuable information on the culture, lifestyle and history of a society or a nation state. Manuscripts are truly the storehouse of different cultures and cultural heritages of the past.

As the old Manuscripts are mostly made with perishable material, these need care and dedication for their long term preservation and conservation with the objective of making these more longevity in life span, durable and endurance in use, study, etc. The loss of a precious Manuscript may be treated as the gross loss of information that perhaps could lead to the identification of a languishing community or of an unkown passage in the life of that connunity or society.

The custodians of Manuscripts, whether in private or public dominion must not forget the proverbial axiom, "Prevention is better than cure." In adhering to this proverbial axiom, the custodians of

Manuscripts should remember to keep naphthalene and other chemicals in a scientific manner, and floral leaves of eucalyptus, camphor, cinnamon, tobacco, etc. in the traditional methods of preservation so as to protect the Manuscripts from damage. Both the scientific and traditional methods of the preservation and conservation are adopted by the National Archives of India and the National Mission for Manuscripts in following the best principles of conservation of Manuscripts for thier long term life-span.

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CHAPTER – VI

SUMMARY AND CONCLUSION

The number of language spoken in this world by 7 billion people is about 6,000. Of these 6,000 languages, only 180 languages have their own scripts. Among these 108 languages which have their own scripts, Meiteilon is one, which is spoken by the Meiteis whose population is a miniscule fraction of the world population. The language which has a script of its own is regarded as a rich, civilised language. Hence, it will not be wrong to assume Meiteilon as an advanced rich language as it has a script of its own.

Naturally, Manipur is a land inhabited by different groups of people speaking different languages and dialects. Though the Meiteis who settle in valley constitute the largest ethnic group of people,

several tribes scatter in the hills which surround the valley. Out of the total population of 28 lakhs of Manipuri, though Meiteilon is the mother tongue of the Meiteis whose population is only 7.5 lakhs, it is also the mother tongue of the Meitei Pangals (Manipuri Muslims) who have settled here.

As Meiteilon has its own script, our revered forefathers wrote many books on various subjects and handed them over to the posterity. These old books (Manuscripts) are known to the present generation as Puya. Not only having a script of their own the revered forefathers had definite knowledge of how to write books and what materials to be employed in writing. They used stone, copper plate, paper, Agarbak, Tengna Mana and Wachet (bamboo strip) as writing plates. They also had a good knowledge of how to manufacture ink for writing on these writing plates. As a result, the present generation have inherited several invaluable books.

Besides having the complete knowledge of making writing materials, our forefathers had also the perfect knowledge of how to conserve and preserve the Manuscripts they had written, so that they can be inherited by the future generation intact. Had our forefather had

not possessed the adequate knowledge and expertise of conserving and preserving the Puyas, it would have been beyond the dream of the present generation to inherit them.

By virtue of these ancient archaic books which have become an invaluable treasure to the present generation, today's researchers and scholars have benefited very much in the construction of a true history of Manipur and to step into the foot-prints of its rich ancient culture and civilization. The descendants of the seven clans of the Meitei race have been able to know to the identity of their progenitors and ancestors and make research in different fields relating to their identity. Therefore, it is quite imperative for the present generation to make an all-out effort to preserve these inherited treasures intact for the future generation to come.

Now, as people have become aware of the value and worth of the archaic books (Manuscripts), many learned fellows and scholars have taken up steps and measures for the preservation of the Puyas. The authorities also taken up steps protect and maintain these rare things intact. The National Archives of India have taken up special programmes in this regard. The Indira Gandhi National Centre for Arts

have asked all the states in India to set up National Mission for Manuscript for discovering the locating the rare archaic Manuscripts and for maintaining them by means of scientific preservation. For this purpose, they have sanctioned a large fund.

In Manipur too, under the aegis of State Government of Manipur, the State Kala Akademi and Manipur State Archives have endeavoured to collect and retrieve, by one means and another, the archaic Manuscripts from the custody of individual custodians. Further, they have applied scientific methods in the preservation of the rare Manuscripts in order to keep them intact for another one years for the coming generation. They are giving financial assistance to individual custodians in order to help them maintain the Manuscripts and buy indispensable materials for the preservation of the Manuscripts. Above all these, the Manipur State Archives and the Manuscript Resource Centre under it have been conducting awareness programmes, workshops and seminars to spread the message about the importance of these puyas and about how to help preserve them for the coming generation. So, in order to make this mission quite successful, the present generation also should extend all-out support.

This thesis under the name and style of “Conservation and Preservation of Manuscripts in Manipur” is taken up with various objectives in mind, one of which is to enlighten the local custodians of Manuscripts in Manipur on the latest scientific trends on preservation and conservation of valuable old documents, and to ensure the longivity of life to their valuable properties. Other than sharing information on the scientific methods of taking care of the surfaces of perishable materials, the local custodians of old Manuscripts need to understand the different types of preservative measures available other than their traditional methods. The National Mission for Manuscripts had introduced new methods and measures for conservation and preservation of Manuscripts based on the knowledge accumulated from the combination of the age-old traditional practices and the scientific methods. Whereas, the local custodians of Manipur do not have much information on the latest techniques of conservation available today.

In order to communicate information on the modern methods of conservation, paying visits to the local custodians and sharing the information is of utmost importance today. On the other hand, the author had utilized the opportunity of the field study for this research

work to collect information from the local custodians on how they have contributed towards conservation and preservaion of the old Manuscripts.

The thesis contains five main chapters dealing with different subject matters. The information collected in relation to the corresponding subject matters are subdivided under various subheadings. The details of the different chapters are described in the following paras.

The definition of a ‘Manuscript’ concurring to international and national contexts. The preparation of a Manuscript requires a few essential materials, without which a Manuscript would remain incomplete. The script is the most important aspect of a written Manuscript. The origin, evolution and development of the Meitei script, and the history of writing that flourished in Manipur during the historical periods are described with the references of primary and secondary sources. The unfortunate event of the historical infliction of Manipuri Manuscripts in 1732 A.D. with the burning of one hundred twenty one Manuscripts is described showing the primary and secondary references so far concerned to the records of Manipur.

The Meiteis adopted the Assamese-Bengali and Devanagari scripts since the reign of the Meitei kings, Rajashri Bhagyachandra (1763-98 A.D.) and Chandrakirti Singh (1850-86 A.D.) respectively. There are many Manuscripts written in the Assamese-Bengali scripts and these books deal with the different aspects on the Hindu religion in Manipur.

Manipuri Manuscripts or records written in Devanagari or Nagari characters are reported to have flourished in 1871 A.D. Epigraphic records written in the Assamese-Bengali scripts are also found in Manipur, other than those written in the Meitei script. The number of Manuscripts that are said to have been burnt in 1732 A.D. is around 121, while those burnt in 1891 A.D. is about 139, as against the total estimate of 4321 Manuscripts of variant subjects in Manipur.

The historical development of Manuscripts in Manipur was started in 1616 A.D. In this year the writing materials of script, paper (handmade) and pen of floral and faunal objects were produced with the royal patronage. The progress was continued till 1891 A.D. The Manuscripts written in the Assamese-Bengali characters flourished since the regime of the Meitei king, Nara Singh (1844-1850 A.D.) as

evidenced by the writing of letters in Assamese-Bengali script by Raja Nara Singh to Mr.Gordon on 28th January in 1844.

There were rise and fall in the historical development of Manuscripts in Manipur, with major setbacks in 1732 and 1891. The Manipur State Archives has so far been able to collect around 16,000 Manuscripts on various subjects. The preservation and conservation of these Manuscripts were carried out systematically based on the scientific methods as directed by both the National Archives of India and the National Mission for Manuscripts.

The Manipur State Archives is the nodal agency for spreading awareness on the modern scientific methods and technology for the preservation and conservation of Manuscripts in Manipur. The Archives functions under the supervision of the National Mission for Manuscripts. The systematic and scientific methods of preservation and conservation of Manuscripts were thus introduced to public and private sectors of Manipur with the broad objective to infuse sensitivity and acceptance of the methods approved by the scientific world.

Even though Manipur includes in the Manuscript map of India for her distinctive features of indigenous conservation and

preservation, the systematic and scientific methods of conservation of Manuscripts is still in its infant stage. The traditional methods of preservation and conservation are assumed as the primary method for protection and safety of the Manuscripts prior to 1880 A.D. The traditional methods for the preservation of the old Manuscripts were based on the indigenous skill and knowledge of the local scholars. The art of writing, and the conservation of the written documents for long periods do demonstrate the knowledge base capabilities of the local people.

As the traditional usages dealt with the writing of Manuscripts on perishable material upon which valuable information were recorded for the future, the Manipuri scholars were indeed conscious of caring for the Manuscripts in a systematic manner.

The making of hand made paper from birch bark, Agarbark, bamboo strips, hide of cows and buffaloes, and palm leaves were done locally. The making of writing stick from floral products like bamboo splits, and from faunal products like porcupine quill and hornbill feathers are examples of the indigenous adaptation to locally available material.

There are certain preparations for giving the finishing touch to the Manuscripts, and this is termed as “Laigee machu teiba”, that is, staining the written surface with the juice or pulp of flowers like *Sanarei* (Marigold), *Numitlei* (sunflower), *Shagoidak* (trumpet flower), *Heedak-mana* (tobacco-leaf), *Nungshil* (literally sour stone but colloquially the alum/potash-alum), *Nungshil ashangba* (green alum), etc. The preparation is a process for effecting the chemical properties contained in the flowering plants so as to ward off small mammals, insects, rodents, from either biting or gnawing at the Manuscripts.

The making of shelves from harder and thicker material, mostly of wood, is taken up for the safe keeping of the Manuscripts. Hard covers made from wood are also made to provide safety to the Manuscripts from accidentally falling down or from careless handling that could damage the sheets. The Manuscripts and their covers are wrapped with red colour *phirangee* cloth so as to provide protection to the Manuscripts. These protective measures, namely, covering with wooden shelves and wrapping with *phirangee* cloth are also prescribed by the modern methods of preservation and conservation of Manuscripts.

With regards to the keeping of Manuscripts in safe custody, preparation and selection of appropriate receptacles and setting up of preservative material, either inorganic or organic substances, are also practiced by the traditional custodians of Manuscripts in Manipur. For conservation of the Manuscripts, the traditional scholars used to expose the Manuscripts to direct sunlight, which today is considered as a harmful practice that could cause damage to the Manuscripts.

Warming of the Manuscripts by placing the receptacle of the Manuscripts upon a hanging structure consisting of wooden rods and bamboo strips over the hearth, appears to be a general trend practiced by the traditional scholars. This practice affects the Manuscripts similarly as sunning them in direct sunlight.

From the above observations of the indigenous methods of conservation of the old Manuscripts, it is assumed that these old practices employed are unsystematic and unscientific. The break-up of the factors, namely, (i) Natural or Physical factors, (ii) Biological factors, (iii) Chemical factors, and (iv) Artificial factors are detailed at length. These deteriorating factors which cause harmful inflictions to

the old texts touch upon the core of the universal axiom, “Everything on this earth has a limited life”.

The natural or physical factors of deterioration, being a natural process which cannot be bypassed, can be considered in the sense of the universal motto, “Prevention is better than cure”. It, therefore, is highly essential to have a fair knowledge of the types or kinds of material used in the making as well in writing of the Manuscripts, such as the elements of nature like the floral and the faunal species used in making of the writing materials, and of the chemical and physical reactions produced in the process.

Almost all of the Manuscripts found in Manipur are written on hand made paper. Consequently, it becomes essential to have both intensive and extensive knowledge on the history of paper making in Manipuri, and of the basic, catalytic, protective, preservative and conservative materials which form the component of making the paper. A similar knowledge on the indigenous ink, the writing instrument and the chemical materials used in writing is to are to be borne in mind.

The geographical, environmental and topographical factors that influence climatic conditions are also to be studied minutely to

understand the factors influencing the physical deterioration of the Manuscripts. Modern scientific methods can be taken up in preserving the Manuscripts.

The agents of biological factors influencing the gradual or rapid deterioration of the Manuscripts include living organisms such as insects, animals and human beings. The agents of chemical factors influencing the gradual or rapid deterioration of the Manuscripts include acidity, impure air, dust, harmful gases, etc. There are also artificial factors of deterioration of the Manuscripts such as careless handling and use, reckless folding of the leaves, marking and unusual writings on the sheets, disorderly keeping, non cleaning of the dust covering the surfaces of the sheets, etc.

The countless wars and battles that happened in Manipur during periods of history caused extensive damages to the valuable old Manuscripts. The reign of the Meitei king Meidingu Moramba (1753-1759 A.D.) down to the period of the infamous seven years' devastation of Manipur (1819-25 A.D.) are to be remembered for the extensive damages suffered in Manipur in all aspects. A listing of the

events that were instrumental in affecting untold damages to the old Manuscripts of Manipur is given as below.

Conservation as is experienced in field so as to have a clear idea of the processes and procedure undertaken in studying of the preservation of the collected Manuscripts after restoration. The history of conservation in the modern scientific term is then presented as a measure of restoration and preservation of old documents originating in the nineteenth century of Gregorian Era. The names of important persons and their activities in the growth and development of conservation activity are given in this chapter. The accounts are then followed up by description of the activities of Indian Institutions such as Archaeological Survey of India and the National Museum. The chapter mentions that various laboratories set up for the conservation of material assets as in different national institutions were in existence since 1951 and 1968.

Brief accounts of the protective and preventive measures against the agents of biological and microbiological causes of deterioration of the Manuscripts, or the bio-deteriorating agents like fungi and insects in which cockroach, silverfish, termite or white ant, booklice,

bookworm, moth, bed bug and rodent take main roles are described in the usual process.

Different kinds of curative measures are suggested to address torn, brittle and fragile sheets of the Manuscripts. A list of the repairing material, such as hand made paper, tissue paper, chiffon, long cloth, cellulose acetate foil, dextrime paste, thin starch paste, etc. along with their respective shapes and sizes is provided in this chapter. A list of few instruments that need to be aquired in course of mending/repairing the sheets of the Manuscripts is also added so that it may assist those persons who are in the process of restoration of the Manuscripts.

Today, due to the ever dwindling of the Puyas, which are, as it were, a rare heritage of Manipur, there is a great fear and apprehension that, after certain generations, they may be lost for ever. The present generation is hardly able to read and know the Puyas. And the present custodians of the Puyas, not knowing the value of the Puyas, not knowing the value of the Puyas, do not look after them very well. As a result, the Puyas have become impaired day by day. In the long run, the Puyas may get lost from the heritage of the Meiteis.

Unable to read the Puyas and not knowing the value and importance of the Puyas, today's generations have taken slight of the Puyas which their forefathers preserved and venerated. Therefore, after the death of their elders, the younger generation often consign the Puyas to the flame during cremation, or throw them in the water, or bury them into the earth. Moreover, on account of the unsound economic condition of the family, the Puyas might get soaked in water due to leakage of rainwater inside the house, or the termites, rats or silverfishes might have eaten or bored them. Due to the conditions, the leaves of the Puyas become stuck together, thereby resulting into their inevitable loss.

Therefore, however belated it may be, it is high time we take up immediate steps to save the Puyas. In the present generation, materials for making Meiteiche are unavailable. Due to disappearance of the profession of Meiteiche moulding, expert Meiteiche manufacturers are no more. There are no more expert manufacturer of indigenous ink in which Puya is written. Due to these reasons, there are no more chances and opportunities to copy out the Manuscripts which are dwindling day by day. To avoid this liability, it is high time the Manipur State Govt.

or the Manipur University take up special projects and schemes to transcribe and publish the extant Puyas. Otherwise, the efforts of the few people who publish very few Puyas at their own cost and at their level best will not be able to yield the importance and value of the Puyas. Again, it is of utmost importance to reprint under a special programme all the important published books (Puya) that have become out of stock.

If these valuable Puyas are lost, we will surely suffer a great deal of handicap and danger when trying to trace the origin, culture, tradition and civilisation of the different ethnic groups of people inhabiting in Manipur. Therefore, in order to save the Puyas, the present custodians of Puyas should be trained how to employ the techniques of preservation and conservation, and the materials for it. To achieve this end, great efforts are required to be made in a large scale. Besides, the Manipur State Govt. shall adopt a Manuscript Policy under a special programme and sanction a large fund for collection of all the extant Puyas in different parts of Manipur and preserve them for the future generations. Else, after some generations, they will gradually swindle and disappear for all time to come.

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